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**INDUSTRY 2000
- NEW PERSPECTIVES*COLLECTED BACKGROUND PAPERS.**

Volume 6 .

**INDUSTRIALIZATION
STRATEGIES
AND
COUNTRY CASE STUDIES****

* Issued as document ID/CONF.4/3 for the Third General Conference of UNIDO,
New Delhi, India, 21 January-8 February 1980.

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UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

INDUSTRY 2000 - NEW PERSPECTIVES
COLLECTED BACKGROUND PAPERS
VOLUME 6

INDUSTRIALISATION STRATEGIES AND
COUNTRY CASE STUDIES

Vienna, Austria

January 1980

FOREWORD

This volume presents some of the background material for the study Industry 2000 - New Perspectives published by UNIDO as ID/CONF.4/3 (Vienna 1979) for the Third General Conference of UNIDO at New Delhi, India. 21 January - 8 February 1980.

The volume contains an overview of the subject area by the UNIDO secretariat, as well as some selected consultants' papers. For the latter papers the respective authors bear full responsibility for the opinions expressed as well as for the material presented. The publication of a consultant paper must not be taken as indicating support or agreement, tacit or otherwise, with its content or form by UNIDO or its secretariat. It is hoped, however, that the publication of this documentation will make a contribution towards the understanding of problems connected with the industrialisation of developing countries.

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
INDUSTRY 2000 - NEW PERSPECTIVES
COLLECTED BACKGROUND PAPERS

INTERNATIONAL INDUSTRIAL CO-OPERATION
AND THIRD WORLD PERSPECTIVES

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ABBREVIATIONS

The following abbreviations have been adopted:

ACP	African, Caribbean and Pacific States in association with The European Economic Community
CIEC	Conference on International Economic Co-operation
CMFA	Council for Mutual Economic Assistance
CPE	Centrally Planned Economies
DAC	Development Assistance Committee of OECD
DC	Developing Countries
DEG	Development Corporation of the Federal Republic of Germany
DFI	Direct Foreign Investment
DMEC	Developed Market Economy Countries
ECE	UN Economic Commission for Europe
EEC	European Economic Community
EFFTA	European Free Trade Association
FAO	Food and Agriculture Organization
FDA	Food and Drug Administration of the U.S.
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GNP	Gross National Product
GSP	Generalised System of Preferences
IBRD	International Bank for Reconstruction and Development (The World Bank)
IC	Industrialised Countries (including DMFC and CPE)
ICC	International Chamber of Commerce
ICOR	Incremental Capital Output Ratio
ICPO	Investment Co-operative Programme Office (of UNIDO)
IDA	International Development Association
IFC	International Finance Corporation (of the World Bank)
ILO	International Labour Organisation
IMF	International Monetary Fund
INPADOC	International Patent Documentation Centre
INTAL	Instituto para La Integración de América Latina
INTIB	Industrial and Technological Information Bank (of UNIDO)
IDC	Least Developed Countries (according to UN definitions)
MNC	Third World Multinational Corporation
MSA	Most Seriously Affected (Countries)
MVA	Manufacturing Value Added
NIEC	New International Economic Order
NTB	Non Tariff Barrier to Trade
OAPI	African Intellectual Property Organisation
ODA	Official Development Assistance
OECD	Organisation for Economic Co-operation and Development

OPEC	Organisation of Petroleum Exporting Countries
R + D	Research and Development
SDR	Special Drawing Rights
SEC	Servicio Latinoamericano de Cooperación Empresarial
SITC	Standard International Trade Classification
TCDC	Technical Co-operation among Developing Countries
TIES	Technical Information Exchange System (of UNIDO)
TNC	Transnational Corporation
UNCITRAL	United Nations Commission on International Trade Law
UNCSID	United Nations Conference on Science and Technology for Development
UNCTAD	United Nations Conference on Trade and Development
UNCTC	United Nations Centre on Transnational Corporations
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNIDO	United Nations Industrial Development Organisation
UNITAR	United Nations Institute for Training and Research
WIPO	World Intellectual Property Organisation

09753

INTERNATIONAL INDUSTRIAL CO-OPERATION AND THIRD WORLD PERSPECTIVES

Overview by the UNIDO Secretariat

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INTRODUCTION

(i) The title suggests the purpose of this paper as one of providing a "view from within" of international resource flows for industrialisation, the concerns of the South in international co-operation. The UNIDO Study on International Industry Co-operation ^{1/} seeks to define methods and mechanisms of co-operation between all countries that respond to the changing requirements of Third World industrialisation. The context was set by Third World demands in the mid-1970s for a new international economic order, an order in which the international structure of production and division of labour is to be radically different from that which prevails today. The most obvious difference between the structures of the 'would-be' and the old global economies is the much greater share of the developing countries in total world industrial capacity, to be achieved through a tremendous acceleration of their growth rates of manufactured output. It is presumed, and supported by the evidence of the past, that such acceleration is not likely to take place without much larger resource flows between countries and, in particular, without major net transfers in favour of the developing countries, even if accompanied by greater domestic savings and industrial investment effort by the developing countries themselves. At the same time, it has become quite clear that industrialisation along the patterns that have prevailed in the past cannot serve as the models for the future. Economic growth itself is threatened; more importantly, the imperatives of eliminating hunger and poverty, of ensuring equity, full employment and mass participation in development, have imposed themselves on Third World societies with too much force to be ignored in a single-minded pursuit of maximum growth rates of gross national product and manufacturing value added.

(ii) The heightened awareness of the complex aims of development has not been the only factor to dampen the indiscriminate zeal for industrialisation at any cost. The spread and growth of self-conscious nationalism throughout the Third World has reacted with particular force against any forms of neo-colonial dominance by the advanced industrialised countries; as the process of industrialisation has appeared to strengthen rather than weaken the dependence of the developing countries on the financial and capital resources, technologies and markets of the developed market economies (DMEs), so the demand has increased for self-reliance, on the level of the nation, as well as for the collectivity of the Third World. Such perceptions have combined to face a heavy responsibility on those attempting to define the new forms of international industrial co-operation: these have to assist in building up national and collective self-reliance and, at the same time, to be tailored to industrial growth patterns that contribute directly to a broad set of development goals. Finally, international co-operative mechanisms have to be sensitive to the heterogeneity of developing countries following different paths of industrialisation.

^{1/} Industry 2000: New Perspectives, Secretariat Study for the Third General Conference of UNIDO, New Delhi, January 1980, subsequently referred to as "Industry 2000".

(iii) The structure of the paper follows the logic of looking at international industrial co-operation from the point of view of national development objectives, in trying to define in what way external resources may be utilised in order to promote national industrial capabilities and all-round national development. Chapter 1 explores some of the relationships between Third World industrialisation and development, using a broad view of DC achievements over the past 25 years and their impact on poverty, income distribution and employment, as well as illustrating the differences in the experience of developing countries in increasing manufactured output, exports and technological capacities, and in changing the structure of the economy. The rising value of South/South flows is highlighted but, at the same time, the analysis makes clear that the dependence of DCs on the developed market economies for their 'engine of development' has been accentuated through industrial growth. Particular stress is laid on the changing locus of control over Third World industrialisation, primarily via the instrument of the transnational corporation - whose phenomenal expansion in the post-World War II era has internationalised industrial production to a large degree.

(iv) The accelerating pace of decolonisation, and the growing awareness of common problems promoted through the non-aligned movement and the Group of 77, have strengthened the desire of Third World governments to exercise national control over the industrialisation process, to make fuller use of indigenous resources, and to strengthen economic ties between their countries in order to increase their economic weight, and to bargain more effectively with the industrialised countries in the struggle for a new international economic order. Chapter 2 examines the implications of the twin concepts - national and collective self-reliance - for the principal inter-country resource flows involved in Third World industrialisation. The conclusions that emerge can serve as broad guidelines for assessing and evaluating the principles underlying any new proposals for international industrial co-operation.

(v) Although this paper is not concerned with the mechanics of industrialisation at the national level, some of the key issues of national industrial policy which are necessary for industrial growth to act as a true instrument of development are simply listed in definitional form in Chapter 3. These include the need for more organic linkages between industry and agriculture, the importance of a large role for small-scale, dispersed and rural industries in the overall industrial structure, the critical decisions concerning product and technology choice and factor pricing, and the expanding role of the state and the public sector in formulating and manipulating the 'right' sets of policy measures for stimulating industrialisation. The national policy framework presented in this definition of 'endogenous industrialisation' provides the essential counterpart to the proposals for international co-operation, since it determines the industrial pattern and structure within which external resources can be properly used to enhance national capabilities.

(vi) Chapter 4 attempts a triple categorisation of developing countries according to the extent of their incorporation into the global industrial production structure and division of labour. Into the first category fall those countries which whole-

heartedly welcome their participation in the international division of labour, whose trading policies encourage liberalisation, and where transnational capital is given favoured treatment. In the second, national objectives, operating through plans, are more concerned with the establishment of an independent and integrated (in the input-output sense) industrial structure, and the emphasis on national controls imposes a bargaining posture towards external sources and international actions. In both these categories, however, the pattern of industrial demand is left essentially to the operation of market forces. In the third case, social priorities and needs, rather than economic growth per se, are given primary emphasis in the pattern of industrial growth. This imposes the requirement of even greater controls on external flows than in the second case, while internally, the distribution of productive assets and incomes becomes the major instrument of national policy. The purpose of this categorisation is to relate alternative national strategies to proposals for international industrial co-operation, since their sensitivity to external resource inputs and the manner of their absorption will be quite different.

(vii) Three country situations: Brazil, Trinidad and Tobago, and India - are used in this final Chapter 5 to illustrate the arguments of earlier parts of the paper with the examples of concrete, historical developments. The country studies themselves stand on their own, and reflect different approaches to the theme of international industrial co-operation. Rather than attempt a systematic comparative treatment, select issues of the relationship between international co-operation and national developments have been highlighted.

CHAPTER 1: INDUSTRIALISATION AND DEVELOPMENT

1.1 The Objections of International Industrial Co-operation

1. The purpose of international co-operation is taken in this paper ^{1/} to signify encouragement of, and support for, the industrialisation of developing countries. This industrialisation effort has to be seen in a particular historical context of the evolution of national societies and international relations. Above all, its conception has been moulded by changing views about development and industry's contribution to development: a new awareness of problems arising out of past experience, a different emphasis on inter-sectoral relationships and causal factors in the development process, and a more discriminating perception of the impact of external resources on national development, arising out of de-colonisation and the effects of the growing internationalisation of industrial production in the post World War II period. The heart of any structural change in the global economy, characterised as a New International Economic Order, must be a major shift from agriculture to industry in the developing countries as reflected in their increased share of global industrial capacity. At the same time, the change in economic structures has to be accompanied by new relations of production and exchange within and between countries which would liberate creative forces in human societies and encourage their use in the industrial process. It is not simply 'more co-operation for more industry': it is 'better co-operation' such that the contribution of industrial growth to development may be indisputably positive and large.

2. The urge to industrialise has always taken pride of place in the development aspirations of the newly independent countries of the Third World. The power and wealth of the North, its success in providing its citizens with high and continuously growing levels of material welfare and full employment, was identified with its success in industrialising its economies. By contrast, the weakness and poverty of the South was identified with the dominant share of agriculture and other primary production in its economic structures, its backwardness with the traditional, subsistence-oriented nature of its agrarian societies. 'Catching up with the West' meant achieving rates of economic growth much higher than those of the West, and the stimulus for that growth could only come from manufacturing industry - holding the key to economic diversification and specialisation, incorporating advanced technologies in its rising rates of productivity increase, encouraging high rates of savings and capital formation. While trade was also seen as 'an engine of growth', the traditional pattern of trade was such that the primary products exported by the South faced a secular deterioration in their prices in relation to the predominantly manufactured imports from the North. In order to benefit fully from the gains from trade, the South would have to actively enter the world market through the export of manufactured goods.

^{1/} And in the general study, *Industry 2000* (op. cit.) to which it is a contribution.

3. From the early days of concern with development issues, therefore, industrialisation played a dual role. It was expected at the same time to transform the global economy from one dichotomised into rich industrialised countries and poor primary producers to one where inter-country income disparities were sharply reduced and exchanges took place on just terms in a wide range of products and services: and at the country level, similarly to transform, integrate, and modernise national societies. Integration involved the merging of the large subsistence economy of most developing countries associated with traditional social structures and cultures with the commercialised, urban, mining and plantation enclaves established during the colonial period, in which were concentrated the centres of decision-making, the administration, and modern services and infrastructure. Another factor attracting DC governments to industry, of vital concern to countries that were anxious to safeguard their newly-won political independence, having inherited insecure frontiers that had often been arbitrarily drawn by the colonial powers, was the need to develop a defensive military capability. The problem of poverty, maldistribution and unemployment, it was felt, would disappear in the process of industrialisation once colonial domination - the main obstacle to growth and modernisation - had been thrown off.

4. The experience of the past 25 years has belied the simple enthusiasm of the early believers. It had been assumed that the path to industrial growth lay in the successful emulation of the new industrialised countries, in spite of the fact that both national and international conditions have been dramatically different for the developing countries of today. Identifying the scarcity of capital and skilled manpower as the main gaps faced by developing countries, external resources in the form of concessional finance and direct foreign investment were welcomed, and national planners placed heavy emphasis on the industrial sector in their investment allocations. However, given the evidence that the pressures of poverty and the problems of underdevelopment appear to have worsened in many countries in spite of impressive industrial growth rates, the future road to industrialisation, and the corresponding role for international co-operation, are now examined with a far more critical eye: while industry retains its dual objectives of international structural change and national transformation through its contribution to economic growth, the pattern of industrialisation is considered more important than the simple aggregate rate of increase of manufacturing value-added; the terms and conditions of international resource transfers and their impact on national sovereignty and control are scrutinised rather than the previously unalloyed welcome reserved for net transfers and global integration. International industrial co-operation must attempt, therefore, to match its contribution to Third World industrialisation accordingly.

1.2 Resources for Third World Industrialisation

5. A fresh look at the requirements for the future industrialisation of developing countries does not point to any dramatically different sources of procedures for their acquisition and generation than those that have been in existence, but it does indicate a necessary change of direction. It is clear that, even more than in the past, developing countries will have to rely primarily on their own efforts to raise and utilise

the resources needed for industrialisation. These will have to be mobilised through higher rates of saving, made possible through the production of larger surpluses in agriculture as well as by the industrial sector itself. If the rates of industrial expansion have to be accelerated to the levels implicit in the Lima target and programme of action for the NIEO, the huge extra effort will have to come from a development process that is more sustained, balanced, and internal resource-using than those that have characterised most developing countries in the past. A stagnant and backward agriculture resulting in food scarcities, along with a poorly-fed, illiterate, unemployed and insecure population growing at unprecedented rates, have existed side-by-side with small, modern, capital-spendthrift industrial enclaves in the urban centres, catering to the market demands of privileged minorities, in a national society characterised by marked inequalities of wealth, income and power. New industrial patterns will have to emerge.

6. Export earnings, mainly from the sale of primary commodities in the past, have provided the principal means of acquiring the huge infrastructure and capital goods imports required for industrialisation but their contribution has been diminished by falling prices and instability. These have been supplemented by dwindling amounts of 'aid', foreign investments in a few developing countries that have proved increasingly expensive, and increased dependence on commercial loans for the supply of equipment and technology on onerous terms. While these external resources have been indispensable for the industrial performance of the past, their impact on the indebtedness, loss of decision-making capacity, and technological dependence of the developing countries has been so great that new methods of raising and using these resources have to be found. Failure to improve the terms and conditions of obtaining external resources for industrialisation will not only leave the developing countries bankrupt in the present; it will also prejudice their eventual capacity for self-help, to reorient their patterns of industrial growth in such a way as to be able to rely more on their own efforts in the future. It is obvious that action in raising resource inputs on both fronts - international as well as national - must be simultaneous and mutually reinforcing.

7. Two sets of analyses provide the material for co-operation proposals that can respond to the changing requirements defined in the previous section:

(a) A review of the recent record of Third World industrialisation, which goes beyond a listing of the principal achievements to highlight the major trends and deficiencies. This will give a differentiated national perspective of the social impact of industrialisation as well as of the external contribution to industrialisation, and suggest the specific kinds of changes needed.

(b) A view of the present world environment for industrial growth and co-operation, and of events and trends that are likely to mould the prospects for future international co-operation. This international perspective complements the national view in order to provide a strategic framework for the consideration of detailed proposals in later sections.

The present Background Paper sets out to complement only the first set of analyses.

1.3 The Record of Industrial Performance in the Third World.^{1/}

8. Real incomes per capita in developing countries more than doubled in the period 1950-1975 (from \$187 to \$400 in 1974 US dollars) while the overall GDP growth rate, averaging 5.4% p.a., was much higher than for any previous historical period. Industry made a major contribution to this growth performance, with the total output of manufacturing industry (value added at 1975 prices) increasing at annual rates of 7.0% in 1960-1970 and 7.8% in 1970-1976, so that the share of manufacturing in GDP rose from 15% in 1960 to 23% in 1976. Overall, the share of DCs in world manufacturing output rose from 6.9% in 1960 to 9.0% in 1977, and of world manufacturing exports from 6.0% in 1970 to 7.6% in 1975/76. Inequalities among the DCs also increased in this period, with the richest regions widening their disparities in per capita incomes over the poorest region of South Asia to 13 times in the case of the Middle East, and 7 times in the case of Latin America. High growth was experienced by only a few developing countries (12 in the range of 4-8% GDP p.a.), while the majority of the Third World (70% or 1.15 billion people in 1970), living in countries with per capita incomes below \$200, have experienced the slowest rates of both GDP and MVA increase (0.5% p.a. GDP per capita in the 1971-75 period for non-petroleum exporting countries and 4.7% p.a. MVA growth). Only four developing countries (Brazil, Mexico, Argentina and the Republic of Korea) have been responsible for over half (52.2%) of the total MVA increase of the Third World (excluding the People's Republic of China) in the period of high growth 1966-75, and ten of them for nearly three quarters of the total (73.2%). The share in world manufacturing output of countries classified as least developed by the United Nations (20 out of 28 for which data are available) remained at only 0.1% over the period 1960-75. In the case of manufacturing exports, concentration among developing countries is shown by the fact that in 1972, out of a sample of 73 DCs, ten countries accounted for 72.4% of the total, with the largest five making up 55% (Hong Kong alone contributed 20%, followed by the Republic of Korea, India, Brazil and Singapore).

9. Manufacturing activities have played a steadily growing role in the trade and export earnings of DCs: if mineral fuels and related materials (SITC 3) are excluded, the growth in the share of manufactures in total exports from DCs has been dramatic in the period 1966-76 (from 19.5% to 45.1%). The volume of manufactured exports grew twice as fast as the rate of growth of MVA at constant prices in the decade 1966-76 (15.3% p.a.). Increases in the value of manufactured exports were of the order of 40-50 times in the case of Singapore, Thailand, Brazil and the Republic of Korea. However, only Hong Kong in 1975 showed a surplus in manufacturing trade with the Developed Market Economies (DMEs), the deficit for the ten largest DC exporters rising from \$6.35 billion in 1964 to \$28.0 billion in 1975. A gradual shift in the

^{1/} Data in this section are drawn from: World Industry since 1960: Progress and Prospects, Special Issues of the Industrial Development Survey for the Third General Conference of UNIDO, New Delhi, January 1980. Subsequently referred to as "World Industry".

composition of manufactured exports towards capital goods and technology-intensive products has taken place (capital goods registered an annual increase of 45.4% in 1968-74, increasing their share from 0.8 to 2.3% of the total) but the share of labour-intensive goods is still predominant (68.2% in 1974), down from 77.8% in 1968). In spite of this growth, DCs still accounted in 1974-75 for only 2.8-3.2% of global exports of technology-intensive goods (machinery and transport equipment). About 90% of DC imports of the same items come from DMEs and only about 5% from other DCs.

10. Most manufactured trade is still in the traditional South/North direction, 65% of DC manufactured exports going to the DMEs in 1975-76, and only 9.7% of manufactured imports coming from other DCs (up from 7.5% in 1960). The value of manufactured exports to other DCs had doubled from 1972-1976, with \$9.6 billion out of \$30 billion export sales in the last year taking place within the Third World. The fastest growth in manufactured items traded among DCs was registered for chemicals, machinery and transport equipment and clothing, allowing manufactured products to increase their share of this total DC intra-trade from 25.9% in 1970 to 46.3% in 1975. Markets of developing countries accounted for a very large proportion of DC exports in passenger road vehicles (78%), machinery and transport (44%), chemicals (50%) and iron and steel (46%). Exports from South and South East-Asia to other DCs represented over 60% of intra-trade in manufactured products. However, the bulk of intra-trade among DCs is still carried on in an intra-regional basis (excluding petroleum, the share was 68% in 1975). In Latin America, regional markets accounted for 76% of all exports to DCs, 70% in West Asia, 65% in South and South-East Asia and 55% in Africa. Regional preferences through regional groups that extend mutual tariff reductions were responsible for much of the growth in intra-DC manufactured trade in the period 1970-76.^{1/}

11. The steady development of technological capacity in a select number of DCs is shown by the increasing depth, diversity and volume of technology exports and direct foreign investments by DCs, both in other DCs as well as in ICs, although these remain small in proportion to IC sources (only 1% of all DFI in Latin America in 1974 was intra-regional in origin, in Asia not more than 5.7%, including Japan). Exports of machinery and equipment, sales of turnkey plants, provision of consultancy services and training of personnel, have all expanded in recent years. For instance, for Argentina in the 1973-77 period, the value of technology exports through the sale of turnkey plants for \$341 million amounted to nearly 10% of all manufactured exports: Taiwan exported 58 such plants in 1976 for a total of \$16 million; by mid-1978, Korean firms were in the process of negotiating contracts worth between \$5-9 billion with an average contract value exceeding \$100 million. India, Brazil and Mexico have been engaged in exporting technology in a wide variety of forms to other DCs as well as to Western Europe and the US. However, DC together accounted for no more than 10% of total technology flows, most of it going to about half-a-dozen DCs, primarily in Latin America.

^{1/} Trade figures are taken from UNCTAD reports, principally TD/B/C.2/190 of 21 March 1978, and TD/B/C.7/21 of 20 September 1978.

The significance of North/South technology transfer may be judged from the figures on direct payments (royalties and fees) made by DCs to the DMEs. In the early 1970s, these ranged from about 1.0% to 2.5% of the value of exports for a sample of DCs studied by the UN/CTC; in 1968, they amounted to a total of \$1.5 billion. As another indication of DC technological capacity, by 1973, 12.6% of the global stock of scientists and engineers engaged in research and development were to be found in DCs (9.4% in Asia, 2.0% in Latin America and the Caribbean, and 1.2% in Africa). As a proportion of world R and D expenditure, the DC share was even less; 2.9% in 1973 (of which 1.63% in Asia) indicating an average expenditure per country of 0.35% of GNP, against the 2.29% average for ICs.^{1/}

12. All these figures of growth in DC manufacturing output, exports and technology transactions indicate an aggregate industrial performance for the Third World that represents a substantial achievement in the short period under consideration. Two striking features, however, emerge from this mass of data:

(a) The distribution of industrial capacity and its growth within the Third World have been highly unequal, with about a dozen DCs accounting for the lion's share, and with countries at the higher-income-end of the DC spectrum favoured with the best performance. Although some of the countries with the highest industrial capacities also account for a large proportion of the total Third World population (China, India, Brazil), the vast majority of DCs have scarcely embarked on the path of modern industrialisation.

(b) The Third World can hardly be said to have progressed in its original objective of 'catching up' with the countries of the North in the global economic order. Not only have the DCs remained with a minor share (less than 10%) of world manufacturing capacity and exports, but they have also not noticeably diminished their dependence on the countries of the North as the major source of industrial innovation and capital imports, in providing markets for their industrial output, or as sources of finance and investment in industrial plant.

13. The expectation that overall economic and industrial growth would automatically solve the problems of poverty, inequality and unemployment within DCs has been severely disappointed in all but a few cases. There is widespread evidence that income distribution has worsened in the majority of low-income developing countries, while the experience is mixed among middle- and high-income DCs. The real incomes of the poor, particularly those in the lowest 20% of the income scale, have declined even in absolute terms, the worst affected being those in rural areas. The factor that has determined whether incomes become more or less unequal as economic growth proceeds at levels above \$300-400 per capita is the set of initial structural conditions, the distribution of

^{1/} For a review of the evidence, see O'Brien, Hasnain, Lechuga, "Direct Foreign Investment and Technology Exports among Developing Countries", consultant paper published in Background volume on Technology for "Industry 2000" op. cit.

assets and incomes that fixes the differentiated participation of stratified social groups in the growth process. Nevertheless, one factor that has caused deterioration in inequality at low income levels has been the structural transformation of the economy from an agrarian, rural setting (where assets and incomes are more equally distributed) to an industrial, urban one (where distribution is more skewed). Within the rural areas the proportion of the population below a poverty line constructed on nutritional standards has been seen to fall or remain the same (five suffered a decline) in seven Asian countries studied over the period 1955-70, where three-quarters of the world's poor are estimated to live (India, Pakistan, Bangladesh, Sri Lanka, Malaysia, Philippines, Indonesia).^{1/} In addition to low-income levels and protein-calorie deficiencies, other signs of poverty that have become increasingly apparent even in countries that have experienced high rates of industrial and GDP growth, are high rates of infant mortality rapid population growth, illiteracy, landlessness and unemployment. Concentration of industrial investment in urban areas, by stimulating rural-urban migration, has led to the swelling of marginal slum occupations in the cities for people who are denied access to tolerable levels of housing, sanitation, drinking water, medical and educational facilities, or regular, remunerative and socially productive employment. Investigating the relationship between improvement in the satisfaction of basic needs and growth in GNP per capita between 1960-1970, Morawetz found that only in five out of sixteen indices of basic needs was there any significant correlation: "... at least for a short period of time (ten years) and if the data are believed - GNP per capita and its growth rate do not seem to provide satisfactory proxies for fulfilment of basic needs and improvement on the same."^{2/}

14. Great hopes had been placed on the growth of manufacturing industry to solve the problems of under- and unemployment in developing countries. The sheer magnitude of the agricultural labour force in the labour structure of most countries makes this an impossible task in the short-term. It had been estimated that a manufacturing sector employing 20% of the labour force would need to increase employment by 15% per year merely in order to absorb the increment in a total work force growing at an annual rate of 3%. If increases in labour productivity were to be taken into account, the required rate of increase of manufacturing employment would rise to at least 18%. Against this yardstick, the actual performance of modern sector industry in creating employment has fallen far short of expectations. Annual growth rates in manufacturing employment since 1960 have fluctuated in the range 2-4% for most developing countries compared with annual growth rates of urban population of 4.6%, while a few exceptions have demonstrated very high growth rates of 8-24% (Nigeria, Algeria, Republic of Zaire, Cameroon, Mauritius) and others even negative rates (Sri Lanka, Guatemala). At the same time, the traditional manufacturing sector, composed mostly of small dispersed units, frequently based on part-time family labour, has been neglected by industrial statistics as well as by

^{1/} See K. Griffin, "Increasing Poverty and Changing Ideas about Development Strategies", *Development and Change*, October 1977.

^{2/} D. Morawetz, "Twenty Five Years of Economic Development 1950-1975", Washington D.C., Johns Hopkins, 1975, P.58.

official policies. This is in spite of the fact that traditional industries continue to absorb the majority of industrial employment in many developing countries, and constitute a valuable reserve of skills and entrepreneurship. Overall, a disturbingly large number of DCs show a declining share of both industry and manufacturing in total labour force utilisation, against a background where total unemployment and under-employment in developing countries in the mid-1970s has been estimated by the ILO at 300 million persons, after a sharp increase of 46% in unemployment over the period 1960-73. Urban unemployment for one-third of all developing countries has been estimated at over 15% of the urban labour force, and at over 8% for the remainder.^{1/}

15. The charge that modern industrialisation in DCs has demonstrated an overwhelmingly urban bias, started the rural areas of investment funds and essential public services, turned the terms of trade against agricultural producers, and attracted the best talent and savings out of the countryside, is a serious one for countries that have declared their development objective as one of reducing poverty. According to World Bank estimates, 85% of all absolute poverty (people with income levels below \$50 per capita) in DCs is to be found in rural areas: and agriculture employs 75-85% of the rural population. Crude death and infant mortality rates are much higher in the rural areas, and rural populations have very limited access (10-15%) to clean drinking water, efficient sewage disposal, electricity, official health services or complete school systems. Ratios of urban to rural disposable incomes per head ranged mostly from 1.5-2 (as high as 9.5) in the 1960s, the multiple of non-agricultural to agricultural earnings has been about 2.5 - 3.5, and output per person, or non-farm to farm labour productivity ratios have tended to converge to the range 2.5 - 7.5 (much higher than comparable historical differentials in the present-day rich countries). Whereas the share of agriculture in GDP typically ranges from 30 to 60%, and accounts for well over half of total employment, its share of investment only ranges from about 4-20%, with the corresponding share of industry nearly twice as large.^{2/}

16. It is not only that governments have tended to favour industry compared with other sectors; they have also neglected the non-modern subsector of manufacturing mostly located in rural areas, in order to subsidise the establishment of large-scale units located in the big cities, which make use of imported plant and techniques. The pattern of industrialisation in the majority of DCs has allowed traditional enterprises dispersed in the countryside to exploit only local markets until they succumb to competition from the 'organised' sector. In the period under review, the scattered evidence available shows that the small-scale and rural industrial sectors have accounted for a declining proportion of manufacturing value-added, total number of enterprises and, occasionally, employment in most developing countries. As indicated above, it usually accounts for half the total employment in manufacturing

^{1/} "World Industry ..." op.cit. Chapter VII

^{2/} IBRD "The Assault on Rural Poverty", Baltimore, Johns Hopkins, 1975, and M. Lipton, Why Poor People Stay Poor, London, Temple Smith, 1976.

industry, makes use of traditional skills and entrepreneurial abilities, is usually small-scale and labour-intensive in nature (although capital-output ratios may also be high), low in the use of fossil-fuel energy sources, and draws extensively on locally available natural resources. These industries have been significant in the branches of food and beverages, apparel, wood products and furniture, printing and publishing, leather products, prefabricated metal products and non-metallic mineral products. Secondary employment in non-farm activities, in slack seasons or outside the hours spent in cultivation, has been particularly important for the poorest rural groups, the small and landless farmers, for whom it may constitute about one-quarter of total income. Industrial promotion has thus encouraged disarticulation and 'dualism' rather than national integration. Exemptions have consciously promoted a process of rural industrialisation side-by-side with urban industry (People's Republic of China, Taiwan, Tanzania), while others have tried to keep traditional industry alive through reserving certain product lines for the small-scale sector, or through protection and subsidies (India, Mexico). The relative performance of rural and small-scale industries has depended primarily on the pattern of development in general, and on the pattern of agricultural development in particular. Where the latter has taken place in a context of equitable asset (land) ownership, relying mainly on the growth performance of small farmers making use of human and animal labour, both forward and backward linkages with agriculture have provided a strong market impetus for the simple products of decentralised industries (Japan, Taiwan and South Korea have been the obvious examples). Capital-intensive agricultural development through large mechanised farmers with high incomes, has been linked much more with the products of urban, factory-based, industry. ^{1/}

17. Among the primary motives for industrialisation was the desire of developing countries to lessen their dependence for future growth on the North, to rely on industrial output to provide a growing surplus for reinvestment and capital accumulation. However, actual experience has highlighted the huge growth of DC debts, particularly after the oil-price adjustments of 1973. The total debt of DCs has risen from \$17.9 billion in 1960 to \$244 billion in 1977. Debt service has correspondingly risen from \$2.6 billion to \$3.6 billion.

Total Disbursed Debt and Total Annual Debt Service by Group of DCs

	(US \$ billion, 1977)						
	<u>Least Developed</u>	<u>MSA Countries</u>	<u>Poor Countries*</u>	<u>Other non-oil DCs</u>	<u>Total non-OPEC DCs</u>	<u>OPEC DCs</u>	<u>Total DCs</u>
Debt	12.1	48.6	38.9	166.2	205.1	38.9	244.0
Debt Service	0.6	4.0	2.2	26.4	28.6	8.0	36.6

* \$265 per capita (excluding Indonesia)

(These figures include Southern European Countries, which have accounted for about 10% of flows in recent years.)

SOURCE: OECD, Development Co-operation (Annual Review, 1978).

The past five years have seen an increase in the debt service: debt ratio, in the range 17-19%, compared with 14-15% in the period 1960-72. Similarly, the interest: debt ratio has risen from about 4% to over 6%. This is accounted for by the fact that between 1970 and 1977 the quadrupling of total financial receipts by DCs from \$16.7 billion to \$63.93 billion has been mainly attributed to the five-fold increase of non-concessional finance (principally Euro-currency loans and export credits) from \$8.66 billion to \$44.39 billion (i.e. the concessional aid proportion fell from 48% to a little over 30% of the total). Since low-income countries now receive about 80% of their external funds through ODA, while the upper-middle and high-income categories receive about 50% of their funds from international bank loans and only 20% from ODA, it is the former that has suffered most from the changing structure of financial flows.

18. Although financial data do not allow one to distinguish between sectors in the use made of external investments, bank loans, credits and aid, heroic assumptions about the share of industry in each category of financial inflow, e.g. 40% of export credits, 33% of DFI, 10% of bilateral portfolio investment, 15% of international bank loans, indicate that the sum total of external funds that have gone to industry in DCs may have risen from \$6.4 billion in 1974 to \$13.8 billion in 1977, or about 20% of total flows. ^{1/}

19. From limited information on the allocation of domestic resources to industry, it has been estimated that on average for the DCs, approximately 18% of domestic investment funds are placed in the industrial sector (gross manufacturing investment as a proportion of gross domestic investment), amounting to (1972) an estimated total of \$14.5 billion (about 60% in Latin America, 25% in Asia and the Middle East and 18% in Africa). This would mean that external funds may have contributed as much as an additional 50% to domestic resources for industrialisation. This statement must, of course, be sharply differentiated for different groups of developing countries. Heavy use of external funds has only been possible for those upper-middle and high-income DCs with easy access to IC capital markets. Nevertheless, the debt burden for individual low-income countries, although related principally to ODA sources, has been onerous in terms of their own limited capacity to export and service the loans. The problems of external debt have to be seen in conjunction with the frequent crises caused by deficits in the balance of payments. The pattern of import-substituting industrialisation undertaken by most DCs has made them increasingly vulnerable to dependence on maintenance imports of intermediate and capital goods to sustain that process. At the same time, neglect of the agricultural sector and particularly of food production has led to the need to import an increasing proportion of essential food requirements. As these imports have naturally taken precedence over industrial inputs in the use of scarce foreign exchange, industrial investment has periodically suffered. The rising cost of fuel imports has acutely aggravated these problems in the MSA countries.

^{1/} See consultant contribution by R Kitchen to Background Volume on Finance for 'Industry 2000' op. cit.

20. The single most important development in the world economy to influence the prospects for Third World industrialisation has been the internationalisation of industrial production in the period since World War II. This has taken place above all through the instrument of the transnational corporation, the TNC, whose phenomenal growth has been amply documented.^{1/} By 1973, the market value of international production by TNCs was equal to one-third of the world's gross output outside centrally planned economies. Although their rate of growth in the 1960s (double that of world output) had slowed down in the 1970s, their activities had grown in areas outside production such as finance, technology and advertising which nevertheless enhanced their control over DC industrial processes. In the area of direct foreign investment, TNCs accounted for more than two-thirds of the total flow to DCs (the stock of foreign investment in 61 DCs for which data are available went up from \$32.8 billion in 1967 to \$76.7 billion in 1976). By 1976, 23% of total investment by TNCs was in developing countries (53% of it in Central and South America), but the increase of affiliate activity beyond the growth of equity values understates the influence of TNC investment, just as the investment figures ignore the growth of non-equity operations. Foreign investment proper may be defined as a relationship in which foreign equity participation is sufficient to exert effective control over the investment, usually exceeding 25% of a company's shareholdings. TNCs also exercise control through other forms of payment for transferred assets, such as licences for foreign technology, management contracts, franchising arrangements and supplier contracts for intermediate inputs.

21. The total DFI stock in DCs by 1976 was largely controlled by TNCs in five OECD countries (USA - 49% alone: UK, FRG, France and Japan) which together made up 82%, most of it in Third World countries with per capita incomes exceeding \$700, with large internal markets and/or rich in natural resources. The growth of TNC financial operations has been equally significant, with half of their foreign bank affiliates in the DCs. In 1977, 37% of total private capital flows to DCs took place through the loans of transnational bank, most of them located in the US, Japan, and the UK. This external financial input for industrial growth was further enhanced by the extensive use made by TNC affiliates of domestic capital markets and the retained profits of enterprises in DCs. The influence of TNCs on the pattern of DC demand for industrial goods made itself felt through massive advertising expenditures, overwhelmingly controlled by 36 US-based agencies. 11.5% of TNC advertising income came from DCs in 1976 (two-thirds from Latin America alone). The TNCs similarly controlled much of world trade in manufactures. About half of the US trade in manufactures has been intra-firm (1970) with 15% of these exports going from US parent companies to their DC affiliates, while 4% of their manufactured imports originate in the DC affiliates. Intra-firm trade has been increasing, with the role of IC parent companies in exporting manufactures to DCs being 2.5-3 times as large as the return export figures of their DC subsidiaries. However, even when the trade takes place outside the TNC complex, the bulk of manufactured imports into the DCs originates in TNCs. These intra-firm figures, in relating to

1/ Data in Paragraphs 20-22 taken from various UNCTAD and UN/CTC publications, particularly TD/B/C.2/197 and E/C.10/38 of 20 March 1978.

majority-owned affiliates, considerably understate TNC influence since smaller equity shares do not necessarily diminish other relationships between linked enterprises.

22. TNC investments in DC industries have been particularly concentrated in food processing, chemicals and engineering products, with other major branches being petroleum, electrical machinery, transportation, rubber and industrial instruments: in general, industries that are characterised by a high degree of product differentiation, and which have experienced high rates of growth in recent years. Concentration in these branches has led to widely differing shares of total manufacturing investment in DCs, ranging from 70% in Nigeria, 50% in Malaysia, 49% in Brazil and 43% in Peru to 13% in India and 11% in the Republic of Korea (intermediate countries being Argentine (31%) and Mexico (28%). The share of DC manufactured exports handled by TNCs has similarly varied from 70% in Singapore, 43% in Brazil, and 34% in Mexico to 15% in South Korea and 5% in India, although in particular branches the control is much more marked (63% of Mexico's engineering exports being controlled by TNC affiliates, as well as more than half of its exports of electrical machinery and transport equipment). Overall, 9% of total DC manufactured exports in 1974 were undertaken by US affiliates alone (19.6% in Latin America). Country case studies indicate that much of intra-Third World manufactured trade is similarly weighted in favour of exports by foreign-controlled DC enterprises.

23. The facts of major and growing TNC influence on DC industrialisation are therefore clear. The effects of this influence in terms of DC development objectives and on their capacity for future industrial and technological growth are much more the subject of heated debate and circumstantial evidence although there are some conclusions of general relevance. The first of these is that most TNC industrial investment in DCs has been undertaken in order to take advantage of their local markets, frequently to circumvent tariff barriers imposed by countries following policies of import substitution and the protection of 'infant' industries. The role of DCs in encouraging a new international division of labour by locating labour-intensive manufacturing production in low-wage, surplus-labour DCs has been much less marked, confined to a few industries such as electronics, where the assembly of components has been encouraged to take advantage of specific Overseas Assembly Provisions in IC tariff schedules, or to exploit the privileges and incentives granted by particular DCs within Export Processing Zones. Assessment of the overall balance of payments impact of DFI has been either positive or negative according to differences in methods of estimation that attempt to measure the overall consequences of import substitution and export promotion; moreover, the results of transfer pricing and restrictive business practices have proved impossible to quantify.

In the area of technological transfers, case studies of industries in particular branches have shown that affiliates of TNCs have not been especially effective in promoting innovation in host countries: instances of relocating R + D facilities in developing countries are rare, as is the use of local consultants: in general, linkages with host country scientific and technological infra-structure have been weak, thereby qualifying the original expectations of DCs that TNC investment would establish bridge-heads for raising the general technological capacity of domestic enterprises and insti-

tutions. In fact, experience with licensing agreements has pointed to cases of inhibiting local innovation and adaptation rather than technological diffusion. However, given the fact that TNCs account for most of the advanced technology in the world, access to their knowhow remains essential for DC industrialisation: In the early 1970s TNCs generated over 80% of total R + D expenditures in the high technology industries in the USA, while the largest 100 firms accounted for 70-90% of the same in all OECD countries with the exception of Japan (52%).

TNC behaviour in acquiring DC investment through mergers and takeovers of domestic enterprises has resulted in denationalisation and the stunting of local entrepreneurship, while the effect on distribution has been negative as a result of greater concentration and extraction of oligopolistic rent. DC entrepreneurs have also suffered from TNC competition in local capital markets in which the latter have successfully preempted scarce funds.

24. The major question of the impact of internationalisation of industrial production on DC industrial growth patterns is one of control over production and investment decisions. In the case of the TNC, decisions are taken in the headquarters offices of the parent company according to its assessments of profit-making potential according to world-wide demand and supply conditions: the affiliate in a developing country is an integral part of a global network of sourcing of materials, trade in components, and distribution of final products among various national markets. These are likely to coincide only fortuitously with the development objectives and social criteria of DC governments. The general experience of TNC influence on DC industrialisation indicates that countries with an established infrastructure of engineering and technological capacities, and governments that have followed clear strategies and policies that have enabled them to bargain successfully with TNCs, have been able to make good use of their undoubted technological wealth and market power: for obvious reasons of their own corporate objectives, TNCs have not provided much help in solving DC problems of poverty, unemployment or the satisfaction of basic needs.

25. The internationalisation of industrial production and the influence of TNCs over DC patterns of industrial growth have received a major stimulus through the massive build-up of armaments industries and expenditures in the Third World over the past two decades.^{1/} From 1957 to 1977, the DCs increased their share of global military expenditures from 5.5% to 16.4%, and in terms of expenditures on the production and trade in armaments, from \$8.6 billion in 1957 to \$45.0 billion in 1977. (China alone spent an estimated additional \$27.5 billion in the latter year). Out of a sample of 93 DCs, military expenditures accounted for more than 25% of total state budgets for 22 countries, and more than 10% of GDP for 13 countries. Exports of major weapons systems to

^{1/} The data and analysis of this issue are based on R. Varynen, *Armaments and Industrialisation in Developing Countries*, Consultant contribution to 'Industry 2000', op. cit. this Background Volume.

the Third World totalled \$20.8 billion in the two-year period 1975-77, of which the US supplied 44%, the USSR 27% and Western Europe 23%. The share of arms imports in total DC imports ranged from 5-20% in the period 1968-75 for 15 of the more militarised DCs; but as a share of imports of machinery and transport equipment (SITC 7), it was much higher (25-90%). There has been a marked shift in the arms trade from private to government-organised channels (the former now accounting for only 4-5% of the total) although the production of armaments in the North has remained largely in the hands of TNCs.

26. Domestic arms production in the DCs has demanded a high level of industrial capacity and technological sophistication: R + D expenditure absorbs a large proportion of total funds as well as some of the most talented and highly skilled scientists, engineers and technical manpower of the countries concerned. The armaments industry has diverted away production that could have been used to satisfy urgent domestic consumption requirements, or export markets, or employed larger numbers of people (armaments technology is notoriously capital-intensive). At the same time, evidence from industrialised countries indicates that the so-called spin-off effects of military research and production to civilian applications have been exaggerated, and the same expenditure directly applied to socially productive research and investment would have yielded better results. In spite of lower wage bills, total production costs in DCs have generally been higher than in ICs, mainly because of short production runs and the growing cost of imported technology inputs. The establishment and maintenance of military industrial installations has made a major contribution to the debt burden of DCs and technological dependence has been aggravated through the type of agreements reached with weapons producers in the ICs. As in other industrial areas, co-production and joint venture arrangements with IC producers have become increasingly common, and 18 DCs are now undertaking the licenced production of weapons systems, although component assembly for TNC producers is the usual extent of DC participation. Alliance between the state and international capital has been a common feature of collaboration in arms production. Dependence on Western technology and systems of organisation has had a major influence on the whole style and character of Third World military and defence strategy, while conversely, maintenance of this dependency has become increasingly important for IC weapons producers for whose financial viability Third World markets have become critical. For all these reasons, rather than contribute to strengthened national independence and autonomy, the processes involved in setting up armaments industries in the Third World appear to have been a major cause of the growing dependence of DCs on IC governments and TNCs.

27. Even based on such a selective review of the DC record of industrialisation in the past two decades as has been attempted in the preceding paragraphs, it is difficult to arrive at an overall assessment that would do justice to the enormous range and complexity of experience of different developing countries. Nevertheless, something can be gleaned from the critical rethinking to which development strategies in general have been subjected since the end of the 1960s, within Third World countries as much as in international fora. Although the basic objective of industrialisation has

lost none of its primacy and urgency in the development aspirations of the Third World, and in fact its status has been reconfirmed in the current debates regarding a new international economic order, there has been a growing realisation that indiscriminate industrialisation cannot be equated with development. As with the dethroned indicator of national economic performance, GNP, the quantitative aggregate of manufacturing output, MVA, has to be dissected in terms of its pattern and content: the types of industry and the value of their output in increasing mass material welfare the relevance of industrialisation processes to the establishment of cohesive economic and social structures: and the distribution of returns from industrial activities between ICs and the DCs as well as within the DCs themselves.

28. The record shows that even quantitative success in achieving industrial growth and capacity has been limited to a large degree to about a dozen DCs. In most cases, the pattern of industrialisation has been determined by the market pull of existing, highly unequal, economic and social structures whether international or national. The needs of the poor, with negligible purchasing power, have not been reflected to any marked degree in the production structure of the modern manufacturing sector, while the consumption preferences of the higher income groups, visible in the pattern of final consumer goods output, have been moulded substantially by the tastes and values of Northern populations. For these reasons, the final product mix of modern industry, which has determined the choice of technologies, has worked in favour of imported processes based on large-scale production, heavy use of capital and only limited call on the greatest resource of the DCs - people - and on locally available inputs of skills and raw materials. The same pattern of industrial resource allocation has signified weak linkages between industry and other sectors of the economy, contributing little to raising the general level of productivity, and exacerbating urban-rural, traditional-modern and agriculture-industry dichotomies instead of encouraging interactions between them. Industrialisation has thus been an imitative process, dependent on imported technologies and organisational forms as well as plant and equipment. Not only has it remained largely dependent on the North for its markets and its sources of finance, investment and technology, but it has also been controlled to a great extent from the North through the mechanism of the TNC. Such criticisms have been responsible for a broad change of emphasis in defining what is desirable in the pattern of DC industrialisation. The key concept in the new perspective has been identified as that of self-reliance.

CHAPTER 2: INDUSTRIALISATION, NATIONAL AND COLLECTIVE SELF-RELIANCE

2.1 A Third World Perspective for Proposals in International Industrial Co-operation

29. The preceding review of trends, problems and deficiencies arising out of the past experience of Third World industrialisation, together with an identification of the major constraints and issues posed by the world economic environment that are likely to effect such industrialisation in the foreseeable future, provide a framework for forms and mechanisms of international industrial co-operation that are better adapted to the changing requirements of developing countries. Notions of national and collective self reliance constitute the underlying conceptual basis for this framework, supported as they are through many attempts over the years by developing countries as a group to articulate their position in working towards a new world order.^{1/} The term self-reliance itself draws attention to the feature that makes it impossible to give it quantitative precision for the whole spectrum of developing countries: the development path to be mapped is unique to each country, its history, culture and endowments. It is useful to consider it as a motivating principle rather than as a fixed set of criteria, analogous in its social relativity to the concept of 'basic needs'. Nevertheless, it should be recognised that the principle has come to the forefront of international discussion in a historical context where the developing country governments have together, despite their heterogeneity, affirmed their common heritage of national liberation from colonialism, and their determination to break or avoid neo-colonial forms of domination by reestablishing national control over the development process.

30. The central notion of self-reliance is evidently development through primary reliance on the full use of one's own resources. Links with the international system are seen as necessary to this aim, but they have to be selective and carefully managed. The earlier faith in the benefits to be gained from simply increasing resource flows, particularly in the North/South direction, has been replaced by a more cautious and sceptical attitude. Resource transfers are desirable only if they are made on terms and conditions that are consonant with the country's own objectives and requirements and, at the same time, act in the direction of reducing the need for net transfers in the future - by developing local capacities: - self-help rather than self-efficiency is the underlying principle of self-reliance. Consequently, there is frequent reference

1/ Starting with the "Joint Declaration of the Group of 77" at UNCTAD I, Geneva 15 June 1964. Other key Conference Declarations have included those of the Non-Aligned Countries at Lusaka, September 1970; the CECLA Consensus of Lima, October 1971; Georgetown, August 1972; Algiers, September 1973; Lima, August 1975; and Colombo, 1976. These are in addition to universally supported resolutions at the Sixth (May 1974) and Seventh (1975) Special Sessions of the UN General Assembly on the establishment of the New International Economic Order, the UNIDO II Lima Declaration of March 1975 and the special meetings on Economic Co-operation among Developing Countries (Mexico, September 1976) and Technical Co-operation among Developing Countries (World Conference on TCDC, Buenos Aires, September 1976)

in the statements on self-reliance to the likely need for a country to improve and remodel its terms of participation in the international system, setting both a floor and a ceiling for the selective linkages between ICs and DCs: - a minimum to sustain the development process and a maximum to maintain effective sovereignty, links of the type that reinforce rather than weaken self-reliance. As a minimum, those international economic ties will be rejected that make the country's own strategic, long-term interests vulnerable to external control and which threaten economic as well as political sovereignty. Domestic social and economic policies have to determine the pattern of international co-operation rather than the other way around. The satisfaction of minimum needs for the whole population, equity, employment and broad-based participation in decision-making, are emphasised as essential elements of a self-reliant development strategy: the need for internal as well as international structural reform to ensure these objectives has been repeatedly stressed by Third World governments. The colonial experience, common to most developing countries, had tended to stifle self-reliant national capabilities responsive to national objectives and requirements by subordinating the national process of change in the colony to the requirements of the colonial power, imposed and propelled by external demand. The basic principle of self-reliant development is that the motor for change should be endogenous, driven from within by the national society and based on national resources, reinvesting the surplus created for national gain.

31. In the international arena, the concept of self-reliance has taken on a collective connotation for the group of all developing countries (collective self-reliance or CSR) as a response to the unequal distribution of power in the global economy and society. The present international system of relations is seen to have evolved in the interests of the present holders of power - the industrialised countries which control most of the world's production, income technology and marketing, who have established 'rules of the game' that favour the perpetuation of their position. So-called free market forces, in an unregulated, oligopolistic international market place, favour the satisfaction of needs articulated by the present owners of productive assets and wealth rather than by poor countries. In order to enter the game of nations with any chance of success, the small, weak, numerically large set of developing countries has to act together in a planned fashion.

32. The diffusion and broadening acceptance of the concept of collective self-reliance have taken place as DCs have progressed in their attempts to provide a common response to what they perceive as their shared contra-position vis-à-vis the industrialised countries. The debate, however, has been simplified into the confines of a North-South 'dialogue' or 'conflict', with the analytical disadvantages that accompany such simplification. The obvious first point is that this type of political aggregation conceals major differences (ideological, resource endowment, development level) among countries of both North and South that are vital for the identification of common economic policy interests. Another is that the discussion has usually excluded explicit consideration of two of the most important actors in global decision-making: - the socialist blocs led by the Soviet Union and China. The reason for these glaring gaps may be partly

ascribed to the difficulty in defining just what impacts these groups are likely to have on DC growth prospects: links have been far more tenuous and recent (and therefore uncertain and ambiguous) than for the historical metropolitan-colony relationships between North and South.

33. Nevertheless, and in spite of covert and overt attempts to undermine it, Third World countries have managed to maintain a common negotiating position towards the North with much greater success than seemed likely to observers at the beginning of this decade. The first opportunity for translating discontent into effective demands came with the oil embargo of October 1973; success in making oil price adjustments became the major driving force for collective self-reliance in March 1975 when a common front was established between OPEC and other developing countries at Algiers. Despite the imprecision of CSR's component elements, and despite full awareness of the differences of national interest separating them, the growing strength of CSR as a political objective owes much to a sense of identification among the 120-odd developing countries with a common cause. The common cause is undoubtedly that of confronting the much more tightly knit political formation of the 'Western' industrialised countries. Not only do the DMEs have highly visible and effective international fora for the definition and articulation of their own group interests, both of an official and informal nature (starting with the OECD, the Group of Ten Central Bankers, GATT, the Trilateral Commission, numerous 'Think Tanks' and Institutes of Strategic Studies), but even more important is the enormous network of informal channels for intellectual, cultural, military and business exchange that have developed through centuries of interdependence and migration. The centrally planned economies have similar, but less developed, channels for their own inter-country exchanges. Compared with these webs, the DCs own fledgling attempts at breaking through colonially-imposed, centre-periphery patterns that run in a North/South direction - of language, communications, commerce, transport, administrative and legal systems - to build 'bridges across the South' seem pathetically naive and utopian. The use of international organisations where their numbers rather than their poverty count, the non-aligned movement, the formation of the Group of 77 within UNCTAD, and the Third World Forum, are among the few such attempts to have drawn public attention, although labour migration, commercial and business transactions are gradually establishing a more solid foundation. It is this latter set of links that will be addressed in this section.

34. Since CSR was initially publicised as an instrument for forging a new international economic order, it has tended to become identified with the specific NIEO claims of the Sixth and Seventh Special Sessions of the UN General Assembly. Consequently, in adopting a common negotiating position towards the ICs for industrialisation purposes, CSR has encouraged demands in the broad areas of access to international capital markets, access to IC markets for their industrial exports, international monetary reform linked with greater and more 'automatic' development assistance, the regulation of TNCs through codes of conduct, and technology transfer on more favourable terms. In any long-term assessment of structural change in the world economic system, it could only be through the accelerated industrialisation of the Third World that a new economic order would be established: the others are intermediate measures.

35. Simultaneous with the use of CSR as a bargaining instrument with the North, the work of UNCTAD and UNDP, assisted by the UN Regional Economic Commissions and Specialised Agencies, in defining the areas of Economic Co-operation among Developing Countries (ECDC), and Technical Co-operation among Developing Countries (TCDC), has extended CSR much beyond the NIEO negotiating framework. This has been achieved first of all by studying the significance of the underlying trends in intra-DC resource flows and linkages, and then by identifying common problem areas that are amenable to solutions of a different nature from those available in ICs, and which would be made possible only (or more efficiently, because of scale economies) through co-operative action by two or more developing countries. Some of these which are of particular relevance to DC industrialisation are discussed below in succession, under the headings of finance, other resource flows, Third World co-operation ventures, and economic integration. The concept has thus evolved in such a way that it can now be said to have two distinct connotations: On the one hand, it implies a strengthening of the bargaining position of the developing countries in order to change the existing framework of international economic relations. On the other, collective self-reliance implies, more positively, a determination on the part of developing countries to forge new links and to formulate new patterns of economic development among themselves, on the basis of their own resources, as an alternative to the existing international division of labour.

The remainder of this section explores in greater detail the implications of national and collective self-reliance perspectives on international resource flows for Third World industrialisation.

36. To take the concept of national self-reliance beyond that of a slogan devoid of operational value, its implications for industrialisation may be examined in the areas of major relevance to international flows: finance, direct investment, technology and trade. In urging the importance of self-reliance, the vast majority of DC governments, including those of the non-aligned countries, have not gone as far as to fully accept the position of the 'dependency' school, which sees the basic cause of under-development as one of historical incorporation into the world capitalist system as a 'periphery' whose surplus is systematically extracted by the 'centre'. Since international integration is said to lead to national disintegration in this view, the emergence from under-development can only begin with a complete break with the international system. The growing DC consensus, however, as articulated above and reflected in the increasing number of policy measures by interventionist states, is in the direction of selective links, planned as opposed to so-called 'free market' operations in the arena of international transactions. Markets for capital, finance and technology are all seen to be far from competitive, subject to political manipulation by the industrialised countries who are the present holders of power. Consequently, the common assumption is that some transactions in foreign trade, technology, finance and investment are better than no transactions, as long as the sources, areas and mechanisms are carefully identified and controlled.

37. The importance of international flows for development and industrialisation is clearer in the case of technology and trade than it is in finance or investment. Although these remain subjects for heated debate, several recent studies point to a clear negative correlation between the stock of direct foreign investment and DC economic growth. More generally, some studies indicate that foreign inflows and domestic savings are negatively correlated.^{1/} Moreover, these conclusions point to the effects of external resource mobilisation simply on the rate of growth of GNP. Key elements of self-reliant development, in terms of greater national autonomy, may be damaged much more by the structural changes in the economy wrought by foreign capital, including export promotion, increases in the incremental capital-output ratio, worsening of income distribution, and 'enclave' development of select sectors, all this aside from the loss of national control in decision-making inherent in the foreign ownership of assets. Considering the evidence of improving investment performance by DCs in the period 1951-73, foreign inflow did not finance more, on an average, than 15-20% of total investment in low and middle-income countries. It was domestic savings performance that contributed to high investment levels, while capital inflow from abroad served more as a catalyst and helped to relax the foreign exchange constraint.^{2/} However, the experience of developing countries with strong governments following consistent policies (but widely differing political regimes ranging from Algeria to South Korea) has gone to show that it may be possible to take advantage of the resources provided by foreign capital, loans and aid without abrogating national sovereignty or capping the spirit of self-reliance.

38. In the industrial area, collective self-reliance is based on the establishment of industrial structures that are distinct from those of the ICs, by benefiting from economies of scale at the regional level, increasing the degree of 'Southern' processing of raw materials, and diversifying the goods and services that can be traded among countries at similar income levels. Production complementarity has to be planned but may go through a variety of channels from joint ventures to co-ordinated sectoral planning, and is likely to generate much greater increases in trade than looser forms of co-operation. The presence of TNC affiliates in many DCs makes it imperative to formulate a common policy towards foreign enterprises to ensure that intra-DC co-operation is not simply the result of TNC plans to rationalise international production and marketing. The possibility of creating Third World financial and monetary systems has received a major stimulus from the recent strength of OPEC members; the existence of Third World countries rich in scientific, engineering and technical skills makes it possible to organise, on a co-operative basis, research and technology development programmes aimed at creating new technologies for the use of locally abundant labour and natural resources. Breaking the grip of TNC advertising and media control through new Third World institutions can have a major impact on the tastes and values that are a striking feature of the dependency of DCs. Joint bargaining by DCs has to be

^{1/} C. Stoneman, Foreign Capital and Economic Development, World Development, Vol. 3, No. 1, January 1975.

^{2/} V. V. Bhatt and J. Meerman, Resource Mobilisation in Developing Countries; Financial Institutions and Policies, World Development, Vol 6, No. 1, 1978.

organised around their role as exporters of raw materials, as growing markets for manufactured products, and as 'hosts' for Northern-based TNCs. Negotiations for improved market access, commodity agreements, joint trading companies, data collection and training in negotiating skills are among the instruments of collective self-reliance in these areas.

2 2 Self-reliance and Trade for Industrialisation

39. Since self-reliance emphatically is not to be equated with a closed-door policy or autarky, the exchange of goods and services between countries is assumed to constitute an important element of self-reliant industrialisation. There can be no easy prescription for all DCs that points to 'too much' or 'too little' trade, for instance as a ceiling or floor on the proportion of GDP devoted to exports and imports. The role of trade in the national economic structure stands more as a function of resource endowments, market size, and level of economic advance than of government policies that assign it a particular function. Very small countries will inevitably find their capacity for limiting their participation in international trade severely constrained by the narrowness of domestic markets and resources, the inability to diversify and specialise in the production of manufactured goods through internal trade alone. Although the larger DCs will have greater room for manoeuvre, the fact of emerging as 'latecomers' in the global industrialisation effort, possessing only a minute fraction of the world stock of capital, technology and skills, makes it essential for them to be able to draw on this stock (however cautiously) for their own growth through trade. Possession of substantial natural resources - agricultural, mineral and fuel - facing a steady or buoyant external demand, acts as a further incentive to trade, increasing the capital available to the country for industrialisation. The principle of selectivity in international contacts inherent in the concept of self-reliance nevertheless remains valid in the trade area. Vigilance and control over trade will be necessary not only to ensure maximum gain for the country but also to distribute the gains within the country.

40. Under the colonial experience, an 'open-door' policy was usually forced on the colonies through small export and trading enclaves that shipped out primary commodities and imported manufactured consumer goods for the indigenous minority that was directly involved in this flow. The spread of benefits to the rest of the economy was marginal: notably, far from stimulating a process of industrialisation, any residentiary industrial activity that had evolved in the pre-colonial period was severely damaged by competition with factory-produced imports. The first 'export-led' period, therefore, was not a promising one for Third World industrialisation. A self-reliant trading policy still has to struggle against the historical nature and pattern of links established under colonialism. The two prongs of the necessary change lie in diversification of trading partners as well as of the range of traded goods. The existence of single, vertical metropolitan power-colony channels through which a select number of mainly primary commodities are exported created dependency not only on the economic fortunes and policies of the metropolitan country but also meant steadily declining terms of trade resulting from stagnant demand for income-inelastic primary exports.

For DCs as a whole, diversification is possible through trading alternatives to the OECD bloc, constituted by the growing markets for manufactures of the centrally planned economies and of other DCs themselves (an important aspect of collective self-reliance). While an increasing proportion of North/South trade has been intra-TNC trade, the nature of production systems and markets in the socialist and DC economies permits a different pattern of traded goods. Diversification of manufactured goods argues for a larger role than the new orthodoxy of an international division of labour where DCs export labour-intensive consumer products and assembly operations, to one in which they can also compete successfully in exporting the technology-intensive products of capital goods and heavy industries. Without this shift in trading patterns, failure to obtain favourable terms of trade in a dynamic sense would undermine future prospects for national self-reliance. Self-reliant trading policies could not envisage chronic and growing trade deficits although they aim at far more than simply obtaining a trade balance at a low level of exchange.

41. A laissez-faire trading policy - with no attempt to implement exchange controls, establish tariff barriers, provide export credits and subsidies etc. - the whole host of measures that governments use in order to plan their trade - might permit DCs to specialise in activities that follow lines of static comparative advantage but allows very little industrialisation to take place. Very few countries - and this includes the 19th century early industrialisers following the British lead - have been able to begin a process of industrialisation without attempting to replace manufactured imports through protective policies. Historical evidence is rich in examples of countries (in Latin America, the Soviet Union and Eastern Europe, China) that have witnessed spurts in industrial growth during periods of enforced delinking, during wars, depressions, politically-imposed embargoes, etc., when the flow of imports has been severely curtailed or interrupted, and when domestic entrepreneurs and savings have turned to manufacturing for the domestic market. At the same time, it is clear that import-substitution has not meant increased self-reliance in the majority of cases: rather, the nature of dependence has changed from dependency on the supply of final consumer goods to one relying on raw material, intermediate and capital goods imports, and increased inputs of foreign technology, skills and finance. The net result may have been a rise in dependency, not only in the balance of payments sense, but also in terms of control over the national economy and future room for manoeuvre. Having established manufacturing capacity expensive in imported capital through an increase in foreign debt (or a steady outflow of profit remittances and fees in the case of foreign investment), the country is further tied to service that debt through future exports as well as to ensure adequate maintenance imports to run its plant at full capacity. The usually disappointing impact on employment, and the worsening of income distribution that has frequently accompanied import substitution, make the question of markets increasingly problematic, and may lead to attempts to switch to exports and the external market dependency that the strategy was meant to overcome in the first place.

42. Trade for self-reliance should be considered an outcome of the production structure of economies rather than as an external determinant of what is produced inside a country, by whom, in what way, and for whose benefit. The nature of domestic resources - agricultural and mineral as well as human - the pattern of local demand as fixed by distribution of income, market size and the allocation of investment resources; these should mould the structure of production undertaken by domestic agents and thereby the pattern of trade with other countries. However, since trade undoubtedly affects the ability to sustain a given structure of production as well as influences the choice of sectors, levels of output and the efficiency with which factors of production are utilised, the 'tail frequently wags the dog', particularly for small countries heavily involved in trade. This natural interaction between trade patterns and patterns of domestic industrial production is exaggerated where government policies favour trade-led or export-led growth, where it is the pattern of external demand that provides the main stimulus or 'engine' of growth, so that national self-reliance is severely undermined. In such cases, the country becomes vulnerable to the behaviour of exports as determined by the economic fortunes of its foreign customers, the tariff policies of foreign governments and, in general, to external shocks and disturbances. Where such policies (as frequently happens in practice) are accompanied by policies that encourage the participation of TNCs, free capital movements, negligible protection for domestic industries, massive inflows of foreign technologies and consumption patterns, the country is left with little autonomy to decide its production structure or even its social policies. Flexibility to adapt to changing international circumstances becomes the prime objective of economic policy, together with tight control in maintaining low wages for domestic labour, the principal comparative advantage of most DCs. The production structure tends to be highly specialised in a few products for foreign markets rather than in goods needed at home. Linkages with the domestic economic structure also tend to be limited: the final consumer products or component assembly typical to such patterns of industrialisation rarely induce 'backward' extensions of the industrialisation process to capital and intermediate goods; 'learning-by-doing and the development of entrepreneurial, managerial and technical skills and technological capacity receive little encouragement. In general, decisions concerning the choice of sectors and products, volume of output, and the level of earnings tend to be externally determined in a trade-propelled industrialisation process.

43. To judge whether trade is consonant with self-reliant industrialisation requires an analysis of the composition of imports. Countries with highly abstemious and spartan consumption patterns, undertaking 'bootstrap' operations in order to grow through their own efforts, will nevertheless require substantial imports of capital equipment in the early stages of industrialisation; they will probably require a steady stream of technology-intensive imports on the future as well, in particular branches of manufacturing undergoing rapid technological transformation, to better exploit domestic natural resources (such as offshore-petroleum), for security and defence requirements, etc. The behaviour and stable share of China's foreign trade sector in a relatively delinked period is instructive in this regard, as is its recent, more open-door policy.

44. Statistics on the evolution of manufactured trade among developing countries indicate the rapid growth in share of the products of heavy industry, and trends that show a shift from intra-regional trade to inter-regional trade in manufactured goods. As far as regional trade in manufactures is concerned, almost its entire growth can be attributed to the existence of preference among trading partners. Recent experience (for instance, in the period 1970/71-75/76, intra-Third World exports grew at 36% p.a., faster than DC exports to DMEs and OPEs) points to a large potential for the future growth in trade among DCs as an important element of collective self-reliance for industrialisation, and a number of structural factors give an indication of this potential. Most general among these is the fact of heterogeneity in resource endowments among DCs, so that the differences in capital/labour ratios between individual countries permit considerable specialisation and exchange of goods. Many of the countries also have similar levels of per capita income as well as patterns of demand for manufactured goods, which afford opportunities for supplying each others' needs. As industrialisation proceeds within the Third World, a growing complementarity in production structures may be expected as a result of differences in the size and pattern of their industrial structures, reinforced by differing national strategies that also produce varying rates of growth of manufactured output (the 'export-oriented' DCs have considerably expanded their sales to other DCs). As national production capacities established through import-substitution develop, export outlets are increasingly sought in neighbouring countries; the observed growth of intra-industry specialisation in differentiated products also argues for greater complementarities. The growth of per capita incomes in the individual DCs will itself have a major impact on the growth of trade in manufactured goods. These factors that account for the large inter-DC trading potential highlight the importance of policy instruments for encouraging such trade. Analysis of DC trade data in manufactures during the period of rapid growth of inter-DC trade (since 1972) shows that most of it has been due to 'trade creation' (obtaining supplies from other DC producers rather than from domestic industrialists) rather than to 'trade diversion' (at the expense of traditional North/South trade), but this is likely to alter with the advance of trade among DCs.

45. Among the instruments to encourage intra-DC trade, the most obvious has been some variant of a scheme for economic integration. Although the success of such schemes on a regional basis has been limited and highly varied (see below), the growth of intra-regional trade has been significantly greater than the growth of total trade for each region, particularly in manufactures (in the Andean and Central American regional groupings, over 75% of all intra-trade is in manufactured goods). However, the even faster rate of growth of inter-regional trade (trade among all developing countries) argues for more emphasis, particularly through a reduction of tariff and non-tariff barriers between developing countries. This might be augmented by the preferential treatment of traded products originating in DCs on a non-discriminatory (between DCs) basis, allowing for temporary non-reciprocity from the low-income DCs. Trade liberalisation between DCs could be undertaken through separate rounds of trade negotiations, starting with a limited number of manufactured goods (UNCTAD estimates point to 36% of DC intra-trade, worth \$18 billion, that could be subjected to an initial round of

tariff cutting), and fitting into a framework of existing free trade areas and integration schemes. Trade preferences could explicitly encourage inter-industry and intra-industry specialisation among DCs (the latter by diversifying production locations between countries in a vertically integrated industry). The important issue is to ensure that industrial capital formation and technology acquisition do not suffer from trade preferences among DCs that result in trade diversion from North/South exchanges. In general, measures for accelerating trade among DCs would have to be buttressed by measures that encourage South/South finance (particularly export credits and currency exchange facilities), shipping and marketing.

Regional Economic Integration Schemes

46. The most ambitious institutional form of collective self-reliance, in industry as in other sectors of the economy, has been that of grouping countries as economic units, starting with some degree of trade liberalisation and customs union, and moving to the joint programming of production. All the major DC regions have shared some of this experience, but the general assessment of progress can only lead to very qualified enthusiasm. It is easier to point to the pitfalls, the political disagreements and stalemates reached in many of these ventures than to any consistent and deepening process of co-operation. The genuine difficulties and threats that face collective self-reliance are nowhere made more evident than in the experience of regional economic integration. Related forms of economic co-operation have been based, for the most part, on geographically contiguous DCs sharing a river basin or lake area.^{1/} The benefits of trade liberalisation, leading to an increase in intra-regional commodity flows, has been referred to earlier, but it is the fact that these groupings include countries

1/ The following is a list of the main institutions of regional and sub-regional economic co-operation operating at the present time, by region. Those marked with an asterisk are based on the furthering of market integration.

Latin America

- Latin American Economic System (SELA)
- * Latin American Free Trade Association (LAFTA) - 1960
- * Andean Group - 1969
- * Central American Common Market (CACM) - 1960
- * Caribbean Community (CARICOM) - 1973
- * East Caribbean Common Market (ECCM)
- River Plate Basin System

Africa

- * East African Community (EAC) - 1967
- * Economic Community of West African States (ECOWAS) - 1975
- * West African Economic Community (CEAO)
- Mano River Union
- Council of the Entente
- * Central African Customs and Economic Union (UDEAC) - 1966
- Common Afro-Malagasy Organisation (OCAM)
- Lake Chad Basin Commission

- River Niger Commission
- Organisation for the Development of the Senegal River (OMVS)
- Economic Community of the Great Lakes Countries (CPSL)

Western Asia and Arab States

- Regional Co-operation for Development (RCD)
- Council of Arab Economic Unity (CAEU)
- Arab Common Market - 1971
- Maghreb Permanent Consultative Committee (CPCM)

Asia and the South Pacific

- Bangkok Agreement
- Association of South East Asian Nations (ASEAN)
- South Pacific Commission (SPC)
- South Pacific Bureau for Economic Co-operation (SPEC)

with very large differences and imbalances in industrial structures that causes the initial problems. Invariably, DCs have accorded priority to industrial development in these schemes, and other potential advantages of integration are seen as secondary. It becomes very difficult to ensure an equitable distribution of industrial capacity when those countries that are favoured by their own established industrial structures tend to attract the lion's share of fresh investments within the region and are able to reap most of the benefits of trade liberalisation - resulting in a widening income gap between rich and poor countries of the group. Mechanisms such as lump-sum fiscal transfers, and phased reductions of tariff barriers in the relatively less developed member countries, have not corrected the basic problem of industrial 'balance' within the region: only the co-ordinated planning of industrial development can help in attaining this objective. The other major conflicts which affect integration efforts have to do with problems of political relations between states, and the incompatibility of political regimes.^{1/}

47. Three distinct 'models' of Third World integration^{2/} may be identified among previous and current attempts (a) a laissez-faire integration scheme based on expanding trade through liberalisation: asymmetrical patterns of exchange and polarisation seem to result, leading to instability and disintegration; (b) a variant of the first where corrective redistributive measures arising out of laissez-faire policies are sought to be applied - much more state intervention in the form of regional development planning, banking and industry allocation mechanisms; is required; (c) the third version goes farthest by including measures designed to overcome or reduce the extent of dependence on metropolitan countries, seen as the major obstacle to the success of other integration measures. Although this last variant is most likely to achieve the development objectives of collective self-reliance, it requires a greater political commitment to regional integration, a wider scope for supra-national decision-making and more complex institutions. In practice, only the Andean group has been a serious (though imperfect) manifestation. To reduce external dependence, the starting point is the adoption of regional measures regulating foreign investment and transfer of technology, including the designation of select sectors of the economy where foreign participation is either excluded or limited (as in the Andean Group's Decision 24). Issues of tariff policies, industrial programming, antitrust and restrictive business practices, patents and trade-marks are all involved.

48. A broad assessment of the integration experience leads to conclusions that the wholistic approach of emphasising joint and harmonised efforts, inherent in the term 'integration', and commonly pursued up to now, has reduced the feasibility of addressing specific problems of regional co-operation. DCs should concentrate instead on trying to

1/ For a recent review, G. Salgado Pefiaherrera, "Viable Integration and the Economic Co-operation Problems of the Developing World", paper prepared for the UN Committee for Development Planning, E/AC.54/L.96, 19 January 1978.

2/ See L. K. Mytelka, "Regional Integration, Dependence and Development", Queen's University, Kingston, Ontario, January 1976.

expand the production frontier by planning together to engage in new activities, and bringing about qualitative changes in local capabilities: enhancing decision-making power vis-à-vis the rest of the world; and emphasising non-market interventions in areas where externalities and 'public goods' characteristics are prevalent. All these will require a larger role for national governments as well as for newly created regional institutions. The initial thrust has to be on policies and projects with visible results, in order to enlist the support of significant domestic forces. In brief, partial programming appears to have greater pay-offs than fictitious attempts at harmonisation: - its prerequisites are the clear identification, at the national level, of areas of objectives, sectors and priority activities to be pursued through regional co-operation, but the initiative for proposing activities should be delegated to a community institution that can use regional criteria in undertaking the programming. Criteria have to be established for:

- (i) the locational distribution of activities and the resultant trade-offs between efficiency and equity;
- (ii) trade-offs between domestic development and the necessary foreign inputs;
- (iii) trade-offs between externalities and other non-market reflected outcomes of the integration process and the latter's negative effects on other national objectives (e.g. employment creation, income distribution);
- (iv) an inter-governmental authority requiring political representation at the highest level to make and sustain decisions and implement them rapidly in the face of opposition from sub-national interest groups;
- (v) a mechanism to ensure that the activities actually undertaken pursue the integration objectives, often not reflected through market forces.^{1/}

49. The other institutional arrangements for collective self-reliance explored in this section, such as multinational marketing and production enterprises and joint consultancy organisations, all lend themselves to operation within the framework of regional integration schemes; conversely, integration schemes can be given a new lease of life through the practical operation of specific co-operative endeavours in particular industrial branches and limited spheres of activity.

50. Closely related to measures for increasing trade is the need to strengthen the institutional capacity of DCs to search for markets in other DCs, to compete successfully with the established advertising and marketing networks of Northern suppliers (particularly TNCs), and to establish a widespread Third World distribution and servicing network. The role of state trading organisations is likely to be crucial in

^{1/} See C. V. Vaitos, "The Meaning, Objectives and Content of Regional Economic Integration in the Face of some Key Structural Conditions Corporating Developing Countries", mimeographed paper for UNDP, New York, 1977.

this regard, and collective self-reliance may require the trading of products between such organisations, acting jointly in some areas, and harmonising techniques and procedures in others. The potential for creating multinational marketing enterprises at the sub-regional, regional and interregional levels would need to be explored, of a scale and efficiency adequate to combat the market power of TNCs in selected industrial product lines.

51. Both these types of ventures have been the subject of a series of studies by UNCTAD over the past few years.^{1/} As far as state trading organisations are concerned, based on the existence of a large number of such entities at the national level, wide scope for co-operation appears to exist in trade intelligence training, pooled orders for imports from ICs in homogeneous goods (joint procurement), joint market research and joint distribution outlets for the export of differentiated non-traditional manufactures. Harmonisation of administrative procedures and joint facilitation centres in particular markets, leading to the establishment of joint trading offices and, perhaps, multinational marketing enterprises have been contemplated. Preferences to each other in bidding for contracts and the granting of 'preferential trading partner' treatment, joint export promotion measures such as the sharing of trade fair and exhibition costs, and the building of joint warehousing facilities among neighbouring countries, are all potentially valuable avenues for co-operation between state trading organisations.

52. In the case of multinational marketing enterprises, the objective is to challenge the domination exerted by TNC-controlled marketing networks over their manufactured exports, as the quantities sold by individual DCs are too small to justify mounting major marketing operations on their own. Obstacles to setting up such enterprises stem from the competition among DCs for breaking into new markets, and it has been suggested that a phased, unambitious process starting with information exchange, joint market research and joint distribution outlets could be fruitful, using existing producers' associations such as regional and sub-regional chambers of commerce and industry to initiate such co-operation. At the same time, there is an awareness that for the multinational enterprise to be effective, it may need to become directly involved in production, stocking and transport, and related financial and other services. Very little has been achieved so far beyond suggesting more detailed sectoral studies, and arranging sectoral consultations between governments, producers and exporters at various geographical levels for the identification of promising opportunities.

2.3 Self-reliance and Technologies for Industrialisation

53. If the argument has been made that self-reliant industrialisation signifies planned rather than laissez-faire trade policies, the justification for planning and control over selective flows in the technology area is even stronger. Given the enormous

^{1/} See Annex II of TD/244, "Economic Co-operation among Developing Countries: Priority Areas for Action - Issues and Approaches", Manila, 1979.

concentration of global technological capacity in a few ICs, there can be no alternatives for the developing countries in the foreseeable future to obtaining most of their industrial know-how from the North. There is little realism in the brave (or negatively motivated) calls for a totally different set of 'appropriate' technologies for the DCs while cutting off technology imports (for complete reliance on locally generated innovation), when the financial resources, research and technical skills, machine tools capacity and, above all, markets for new technologies on the scale required, just do not exist in the Third World. 'Technological self-reliance' has to take on a far less ambitious meaning, which has to do more with assimilating, adapting and improving upon imported technology than with the creation of local research and development capacities expected to generate products and processes appropriate to domestic needs, resources, income levels and tastes. The latter is undoubtedly important, but it becomes feasible after a long apprenticeship period spent in assimilating imported technology: a period during which it is vital to avoid or limit the worst effects of imported technology on the domestic industrial structure, economy and society, by channelling its use (protective enclosures), unpackaging it from foreign control elements, and employing it as an instrument for improving local capacity.

54. Among these negative effects must be listed the direct cost of technology imports - payments for patents, licenses, royalties and other services, the absence of linkages between local firms and local research institutions and consequent disinterest in, and inhibition of, local innovation, inappropriateness of product technology in terms of local needs and incomes and therefore in limiting the size of market, and inappropriateness of process technologies in terms of local factor endowments. A technologically dependent country is a heavy net importer of technology that is likely to remain in that situation (unlike Japan that consciously and progressively reduced its imports), likely to acquire it on bad terms, showing little substitutability of local for foreign resources, having to import not only the elements of technical knowledge, but also the capacity to use the knowledge in investment and production. In the process of bargaining for the acquisition of technology, the dependent country is likely to pay a high price because of its limited knowledge of alternative sources, in the poor estimation of expected real gains, and in having no withholding power.

55. Where technology is important as part of a DFI package, the loss of control is much more complete since decisions are taken in the head office and the package consists of a whole series of elements in the production chain: - proprietary process knowledge, product specifications, trademarks and brand names, management systems and training (some covered by formal patents, licenses, and payments for R + D and management services). However, other technology contracts through joint ventures or licenses can also take investment and profit allocation decisions out of the hands of local owners and managers, since restrictive clauses may determine: sources of imports of machinery, materials, spare parts, prices and quantity of output, permitted export outlets, non-transference of patents, and restrictions on local R + D. For the creation of effective local scientific and innovative capacity, skills in plant construction, and modifications in installed plant have to be acquired through learning-by-doing; the nature of technolc-

gical dependence is such that local businesses, and even state enterprises, prefer to import foreign technologies bearing less risks, while foreign licensors or direct investors insist on using their own suppliers or plant contractors.

56. The decision to licence foreign technology rather than develop it autonomously, or acquire it through 'non-negotiable transfers' such as the use of foreign technical journals, the purchase and taking apart of equipment embodying technology, or the direct observation of scientists and engineers, is crucial to the question of technological self-reliance. Evidence suggests that restrictive clauses contained in licensing agreements such as those prohibiting exports, or calling for the transfer to the supplier of innovations or improvements on the imported technology reduce the licensee's incentive to develop technology. The impact of licensing is also to create a managerial climate where technology imports are assumed into future planning, while TNC head offices do not regard competitive innovation centres with favour. In contrast, experience in introducing new products on their own gives enterprises the confidence to generate new product technology and new products in the future: Technological apprenticeship is not encouraged for licensing, and opportunities for learning-by-doing are lost. Imports of machinery also tend to be made from parent companies or licensors so that this avenue for choice as an element of self-reliance also appears to be inhibited by licensing.

57. Unless the state takes special initiatives to encourage innovation, firms relying on licensed technology also do little R + D; even where it is undertaken, it has been more frequently of the product adaptation type than of genuine innovation in processes. Studies show that foreign firms and state corporations gravitate to sectors that are characterised by volatile and complex process technology, e.g. chemicals (rather the more stable technologies embodied in machinery, e.g. machine tools) so that the technology has to be acquired through licensing. Other reasons for licensing are less valid from the viewpoint of self-reliance: e.g. the desire to use brand names, especially for export, or the existence of a prior relationship as a subsidiary of the technology supplier, or as a distributor of final goods produced by it. Larger firms have tended to import technology more readily than small ones, but it is the structure of ownership that seems to be even more determining as a factor in the licensing decision: foreign firms, state-controlled corporations and mixed-enterprise firms all rely much more on imports than wholly national firms. Although the correlation between foreign ownership and product sectors where technologies are complex explain some of the recourse to licensing, many of the processes used by them are relatively simple and offer considerable opportunities for local technological development.^{1/} National firms tend to use licensing only to compete in markets characterised by imported tastes and brand names or in sectors where technologies are rapidly changing.

1/ See M. Wionczek, "Notes on Technology Transfer through Multinational Enterprises in Latin America", *Development and Change*, Vol 7, 1976 for the behaviour of pharmaceutical and automobile exporting enterprises.

Nevertheless, the policy of reducing foreign equity shares in joint ventures may be less promising in exerting national control than originally believed if such enterprises continue to rely heavily on licensed technology.

58. The Pugwash symposium on self-reliance ^{1/} defined the requirements of self-reliance in the area of science and technology as "building up indigenous capacity to:

(a) generate and put to use those elements of scientific investigation and technological know-how which an autonomous decision-making process has selected for supply from domestic sources;

(b) identify and acquire, on the best possible terms (financial, institutional and technical) those elements which the same decision-making process has identified for foreign supply; and

(c) blend the two components in such a way that continuous increases in productivity take place."

This would mean harmonising technologies of different vintages and capital/resource intensities so as to make optimum use of all available domestic resources, including human resources. The characteristic feature of the new technological style, modifying the Maoist dictum, would be one of 'walking on many legs' - rural and urban, small-scale and large-scale, labour-intensive and capital-intensive, technically sophisticated and unsophisticated. The same symposium went on to say that technological self-reliance could be feasible only in the context of a development strategy that created the demand for indigenous science and technology rather than continued dependence on foreign technology: "The tastes and values of elites in DCs have provided the demand for the current patterns of development in those countries - imitative of and dependent on the highly industrialised countries. In consequence, a universal technological style and massive transfers of technology from the industrialised to the developing countries have played a major part in the realisation of those patterns. So, while fullest advantage should be taken of advances in science all over the world, the developing countries must evolve - individually and through collective co-operation - technological styles which are suited to their environment, their resource endowment, and, above all, their minimum-needs oriented development strategy". Although such technological styles would vary among the DCs, their common features would reside in being:

(i) conservationist in approach to natural resources and environment;

(ii) emphasising the use of local natural and human resources and markets;

(iii) demonstrating the need to resist the temptation and pressure to measure itself against so-called 'international norms' which reflect the norms of the highly industrialised countries.

^{1/} "The role of Self-reliance in Alternative Strategies for Development", Dar es Salaam, 2-6 June 1975.

59. If technological self-reliance signifies as well the maximisation of choice through increased knowledge and capability, it means developing the evaluative skills which permit appropriate choices of technique, bargaining skills which make possible improved terms for technology imports, research and development skills which enable the firm to depackage technology, purchase components from least-cost suppliers, develop elements of the package themselves, or extend the technology in order to diversify product lines. The basic choice is evidently that of the nature of output (what to produce) which, through the drawing up of detailed product specifications, narrowly limits the range of choice with respect to the source or supplier of technology (how it is to be acquired).^{1/}

60. The market transformation of international business arrangements between TNCs and technology buyers in the DCs in the 1970s, grouped under the heading of 'technology sharing agreements', provide opportunities for more self-reliance. The sustained enterprise-to-enterprise collaboration that characterised parent-affiliate relationships is being extended to unaffiliated enterprises through technology sales which include the sharing of production responsibilities, markets, design and engineering activities. Such arrangements refer to the latest 'frontier' technologies and include (i) the setting up of production capacity, (ii) patent and trademark rights, (iii) marketing of end-products in ICs, (iv) training of nationals, (v) up-grading of the original know-how sold, (vi) occasional design of new product lines to compete in world markets. Technology sharing has evolved as a consequence of greater competition among technology suppliers, growing political and economic uncertainties and risks associated with equity-investments, and as a response to the increase of DC host country bargaining power and restrictions, regulations and limitations on foreign investment: together, these have acted as constraints on the free hand TNCs have enjoyed in the past in determining the terms and conditions of technology transfer. Recent examples of technology sharing agreements may be found in countries that have traditionally welcomed investment by TNCs such as Brazil, Mexico and Colombia, and they are found in "high technology" industries such as aircraft, petrochemicals and computers. As long as TNCs find that such technology sharing fits in well as part of corporate strategies that aim at maintaining global market positions and earnings rather than competitiveness in the home economies, at the same time obtaining high financial returns from these technology sales, DCs can continue to benefit from their selective use of such arrangements through tough bargaining. This presupposes, however, that the DCs concerned already possess considerable technological capacity, which has to be built up in the first instance through careful protective policies that discriminate among imports and investors and give preference to domestic design and engineering efforts. On the TNC side, the determined stance of some DC governments, and the very success of DC enterprises in narrowing the technological gap and competing in both export and domestic markets have created fears, already reflected in the more cautious attitude of IC home countries and corporate managers towards the open sharing of technology with developing countries.

1/ See L. K. Mytelka, 'Technological Dependence in the Andean Group', International Organisation, 1977. Pp. 102-138.

61. In discussing indigenous technological capacity, a hierarchy of abilities may be required to enable countries to progress from (a) assimilation (ability to effectively use) and (b) modification (shop-floor changes to processes and products) to (c) replication (dismantling, recreation and duplication) of imported technologies. While the first of these comprises productivity changes through improved operating efficiency and learning-by-doing, usually within individual enterprises and production units, the other two, modification and replication, are far more demanding, both of the educational and training system of the country that has to impart basic scientific and engineering skills, and of a machine tools or capital goods sector that enables machinery to be designed, altered and built locally. Two further stages of (d) technological creation and (e) export of technology involve, in addition, construction, consultancy, financial and marketing skills that surround the core production process itself in order to convert it into a viable manufacturing enterprise able to compete successfully in domestic and export markets. Technological self-reliance would have to cover the gamut of these abilities.

62. One important element of self-reliance in industrial technology is the domestic development of the capital goods sector, recognised as a vital determinant of the rate of investment since the mid-1950s and in the early planning experience of China (1953-1957) and India (1956-61). If this sector is broken down into the two branches of machine tools (capital goods for producing capital goods) and the other supplying capital goods directly for the consumer goods sector, it is investment in the machine tools sector that has been shown to permit faster rates of growth of output at future dates. Although the products of this sector can be supplied through export earnings and/or aid, failure to produce them domestically has made the countries concerned heavily dependent on the caprice of external sources for their industrial growth and investment. This was demonstrated by the contrast in Indian and Chinese experience in the 1950s and 1960s: whereas heavy investments by China in the machine tools sector in her first Five-year Plan enabled her to supply 85% of the machinery and equipment needed for the Second Plan from domestic sources, in India, by 1965-66, only about 55% of the total requirements of machinery and components (of which only one-eighth could be considered the output of the machine tools sector) were produced domestically (conscious stress on raising investment in this sector was made in India's second Five-year Plan, but the rate of investment remained much smaller than in China). After 1960, although China's export earnings and aid fell sharply (she nevertheless managed to pay off her debts by 1965), she was able to maintain much higher rates of investment than India, which continued to rely substantially on imports of machinery and components, financed in large part in the late 1960s by foreign aid.^{1/} Perhaps more important than its contribution to investment is the role of an indigenous machine tools sector in raising the level of engineering and technical skills in the country for design, construction and operation. These allow the country to advance along the

^{1/} K. N. Raj. 'Role of the Machine Tools Sector in Economic Growth: A comment on Indian and Chinese Experience'; Munco, New Delhi, 1967.

stages of technological progress referred to above, from assimilation to replication, local generation and export. The self-confidence gained by 'doing things oneself', even at the expense of some short-term inefficiency and learning costs, is essential to the country's capacity to launch into new products and processes. The aggravating question that remains, however, is that of market size and efficient scales of production: how many DCs have internal markets large enough to set up capital goods industries on their own? Even here, there may be a case for improving the simple tools required for peasant-based agricultural production and artisanal industries.

63. The acquisition of engineering consultancy skills has long been identified as one of the key elements in achieving technological autonomy for industrialisation. This can be judged from an operational definition of engineering consultancy, where consultancy is a set of methods and organisational structures which allow relevant scientific, technical and economic knowledge to be gathered and converted into optimal designs and instructions for the construction of specific industrial projects, given the external constraints of markets, input availability and labour skills. Consultancy and engineering services start with prefeasibility and feasibility studies, followed by detailed project engineering which demands a wide range of design skills and extensive drawing office facilities; it also requires access to process technology so that the project can be disaggregated into discrete places of equipment or machinery with drawings and specifications, and designs for civil works and mechanical construction. In this form, the project can go out to tender so that the consultant can perform his functions of examining bids, recommending appropriate suppliers and contractors, and then providing on-site supervision of construction work until the plant is fully commissioned. Consultancy organisations have gradually become autonomous from the engineering or production units of industry. They have proliferated to reflect the specialisation of industrial processes, having generally grown up around a particular industrial process: however, they have also integrated in order to perform services in a wide variety of industries, and to respond flexibly to rapidly changing market circumstances.^{1/}

64. Their importance to DC industrialisation is ascribable to their function as the 'investment arm' of industrial capital formation, involving not only the purchase and installation of new machinery but also research into, and development of, new methods, new systems of operation, and new products. Consultancy organisations in DCs are therefore likely to take on responsibility for vital decisions concerning the choice of technology in the broadest sense (from raw material sourcing to output specifications); and where national technological capabilities, at both enterprise and government levels, are limited, they tend to proceed on a turnkey basis. If indigenous consultancy organisations can be built up, they can improve DC access to technological information and its diffusion internally, in particular those aspects that are relevant to the adaptation and modification of imported process equipment and product ranges.

^{1/} See J. Roberts, 'Engineering Consultancy, Industrialisation and Development,' in C. Cooper ed. Science, Technology and Development, London 1972.

Their value in increasing the bargaining strength of DCs is obvious, particularly in unbundling foreign technologies, although their contribution is constrained by any restrictive provisions regarding proprietary knowhow in technology transfer agreements. Consultancy services in those DCs with a significant industrial base, such as Brazil, Mexico, India and Algeria - have been more successful in providing project design and construction facilities within production enterprises than in acting for equipment manufacturing, except in rare cases where the scale of output is large. Public sector enterprises in the capital goods sector have been particularly successful in establishing engineering departments and design capabilities.

65. In general, however, it has been observed that DC consultancy organisations have been better at undertaking project planning and feasibility studies than in detailed project engineering: some countries have made it mandatory for a local consultancy firm to be associated with any process involving foreign investments, even if the detailed process engineering is undertaken by a foreign consultant. One avenue for further 'indigenisation' is for the national consultancy firm to become the licensee of foreign process owners or to reach a technical assistance agreement with a foreign consultant so that the capacity to design complete plants unaided can be acquired over time. In such instances, care has to be exercised that the local consultancy organisation does not simply become (and remain) a junior partner of the foreign collaborator. Conscious promotion of linkages with local equipment manufacturers, to encourage the exchange of technological ideas and knowhow, is another important task for those DC governments interested in building up local consultancy capabilities. Where countries have the potential for creating large engineering industries and local machine-building, the role that consultancy services can play is enlarged to cover R + D and innovatory activity leading to process engineering, so that they can adapt their own productive structures to meet changing market conditions. To turn from being technology takers into becoming technology makers signifies that DCs can select out of the original input combinations of production technology those elements that give them a price or quality advantage over competitors. The costs, however, are high of building up local consultancy organisations to a stage that allows them to successfully engage in the more complex tasks of design engineering - too high for the individual firm to bear. Measures of protection for 'infant' consultancy firms are required in this as in any other area where learning costs have to be borne by the state.

66. These considerations, which also give an indication of the ladder of complexity of engineering and consultancy services that may be necessary and feasible for the wide range of DC industrial structures, show what might be achieved through co-operation among DC as another element of collective self-reliance.^{1/} The spectrum of existing consultancy enterprises, which span a size band of firms with less than 50 personnel to those with over 1000 staff, covering functions that range from market surveys and feasibility

^{1/} See papers for Expert Group Meeting on the 'Role of Industrial Consultancy in Developing Countries', held by UNIDO in Ljubljana, Yugoslavia 26-30 June 78, especially paper by K. D. Marivala ID/WG/289/1. 2 June 1978.

studies to full-fledged design and engineering services (involving the kind of multi-disciplinary expertise required in metallurgical plants, chemical fertilizers, petrochemicals, etc.), point to the need for great flexibility in the modalities of collaboration.

67. A number of DCs (India, Algeria, Iran, Brazil, Mexico) have set up public sector consultancy organisations that have generally grown out of the design wings of state corporations or government departments such as the railways, and which lend themselves to joint venture arrangements (currently being explored between India, Algeria, and Nigeria, and between the NIDC of India, Iran and Tanzania). The non-aligned group have decided to establish a Project Development Facility, in order to facilitate access by DCs to the technological resources available in other DCs, through the provision of project identification and feasibility as well as project planning, engineering, designing, implementation and evaluation services - using finance and technical skills obtained almost exclusively from within the Third World. Twinning arrangements between DC consultancy firms are also being explored on a project-to-project bases, as are the supply of training facilities from one country to another (such as on-the-job training in home offices to consultancy firms, specialised training in R + D institutions). A possible arrangement is a triangular combination involving IC high technology inputs, or the provision by two or more DCs for taking up work in third countries through a consortium or sub-contracting agreement. The basic approach employed may be that of DCs with well-established design and engineering services to start functioning in a 'host' DC in association with a small core group of local personnel with basic engineering training, helping in the choice of fields of specialisation and the spectrum of services to be offered, in the overall organisation for the proposed design and engineering organisations, and in developing the systems, procedures and practices most suited for the conditions obtaining in the country.^{1/} Concepts of planned 'fade-out' for the DC enterprise providing technical assistance can be used as functions are transferred. Institutional collaboration in engineering and consultancy is likely to be similar to arrangements between institutions engaged in industrial R + D and scientific training: it may be at the government-to-government level between two public sector organisations: between two enterprises in the private sector or between a private sector consultancy organisation and a state design and engineering outfit: and it may be arranged for a particular industry/sector, for the development of a particular project, or as a more permanent link of the twinning type.

2.4 Technology/Investment Flows among Developing Countries

68. It has been pointed out that an increase in trade among developing countries is dependent on the prior establishment of complementary industrial production structures and capacities for which Third World technological capabilities are pre-requisites.

^{1/} UNCTAD Secretariat Study by V.R. Sashital, 'National Design and Engineering Organisations: their role in strengthening the Technological Capacity of Developing Countries', TD/B/c.6/35, Geneva 1978.

Part of the justification for increased exchanges of manufactured goods among DCs comes from the assertion that these products, particularly capital equipment and machinery, frequently embody technologies that have undergone some adaptation to DC conditions and are consequently more 'appropriate'. The data for technology flows between DCs in terms of trade in technology-intensive manufactures, turnkey sales and joint ventures, have shown that, although their growth has been considerable in recent years, it is still a small fraction of North/South flows of technology, that development has been confined to a very limited group of DCs, and that evidence on the special nature of the technology is too scanty to be conclusive. Nevertheless, they permit the formulation of some suggestions that should strengthen collective self-reliance in technology, as well as in direct foreign investment among developing countries.^{1/} Studies have shown that a strong complementarity exists between the exports of technology and of manufactured goods (particularly capital goods) from DCs. These technology exports have, in most cases, originated from technologies previously acquired from ICs, and those DCs that have been most successful in unpackaging, adapting and diffusing their own technological imports have been the major exporters to other DCs later on. Using the chain of technological progress outlines in paragraph 61, going from productivity changes within a given technology (assimilation) through design efforts (replication and adaptation) to construction activities that involve the generation of new products and processes as well as the actual setting up of entire production plants, the more advanced DCs have reached a state of technological autonomy that allows them to become exporters in their own right. These technology exports may take the form of DFI, turnkey sales, provision of consultancy services, licensing, or the training of local staff depending on the type of seller, the motivation behind the transaction, and the nature of the technology and its comparative advantage (e.g. lower cost, preferential arrangements, supply of 'additional' or non-competitive technology).

69. Apart from the need to demonstrate its intrinsic worth, the prerequisites for DC technology exports on any significant scale include knowledge of market opportunities among buyers and sellers, support facilities for international transactions that cover adequate legal provisions, assistance in financing, transport and marketing, and a domestic policy that makes exporting profitable. This indicates the scope for South/South co-operation, although its complexity is due to the fact that the agents of technology and DFI among DCs are mainly private enterprises, and more recently, multinational enterprises that have been set up jointly by several DC governments. Acting together, DCs can pool their resources of R + D, in their marketing efforts in ICs, and in monitoring the kinds of IC technological advances that are likely to have major impacts on their own future comparative advantage. (Examples are developments employing solar energy and techniques for exploiting resources of the sea-bed). They can also harmonise legislation, bargain for better access to IC markets in technology, and extend enterprise structures to the format of full-scale Third World corporations.

^{1/} See O'Brien, Hasham, Lachuga, op. cit. for more detailed analysis and recommendations.

In promoting private transactions, the key areas for co-operation lie in information dissemination, and in creating an appropriate legal and financial framework: finance in particular will be needed for the supply of credits for buyers and sellers and the provision of insurance guarantees to cover DC lenders in bidding with DCs for turnkey contracts. While drawing up legislation to ease the inter-DC flow of technology and investment, care has to be exercised in ensuring that the terms and conditions governing the flow do not replicate the harmful impacts on host countries that have been described for the traditional 'Northern' sources. In order to minimise the 'loss of control' aspect of DFI, while retaining the advantages of management and technical services that may be necessary for the smaller, newly-industrialising DCs, joint ventures may be the most appropriate institutional form, and recent experience has pointed to their proliferation.

70. The Latin American Institute for Integration (INTAL) has set up a new advisory scheme on a non-profit bases, SEC (Servicio Latino-americano de Cooperacion Empresarial) that is expected to exercise a brokerage function for Latin American-owned companies interested in entering joint venture or technology transfer agreements with other firms in the region, providing them with background information on local economic developments and investment legislation, a review of lending firms, principal markets, and industry innovation, tailored to client needs. SEC can also help in matching sources of capital and technology demand and supply by publicising company requests: its main audience is the group of locally-owned small and medium sized firms that wish to expand beyond national markets. Agencies similar to SEC may be conceived for other regions or in establishing cross-regional contacts. The advantage of such services is that they encourage private flows by creating opportunities for smaller firms, and thereby greater competition in DC markets. Co-operation involving public resources being made available by DC governments has been less common in the past although the opportunities for sharing complementary skills clearly exists. One of the examples of such co-operation may be found in the exchanges between national technology institutes - the concept of identifying 'centres of excellence' in particular sectors or branches of industry that can be given a regional or Third World vocation of transmitting knowhow by a small initial injection of finance from international organisations or inter-governmental agreements (for instance, UNDP through its TCDC activities and regional funds, is helping such centres in food processing, textiles, leather, etc.).

71. From the preceding discussion, it may be inferred that the brunt of technology co-operation among DCs has to be based on currently available technologies acquired from the North, and that policies for collective self-reliance have to emphasise aspects of promotion and protection, using institutional mechanisms which handle:

(i) the provision of technical information, classified by item supplier, quality and possible cost;

(ii) identification of potential users and the essential brokerage between sellers and buyers;

(iii) establishment of the vital support activities covering consulting engineering, international trading companies and financial assistance, the last including credit arrangements for buyers and sellers plus provision of insurances and financial guarantees:

(iv) purchasing behaviour of international organisations and governments, which can offer valuable markets to suppliers, particularly when the latter are medium and small firms:

(v) the negotiation and elaboration of new legal arrangements capable of adapting concepts and practice to the requirements of DC exporting possibilities:

(vi) formulation of preferential systems designed to give DC exporters genuine opportunities in IC markets and, most importantly, to stimulate the growth of intra-DC trade in technology:

(vii) co-operative efforts by DCs to harness their technological resources towards the joint production and maximum use of technologies appropriate to their needs and resources and to monitor the technological developments in the ICs.

2.5 Exchange of Skills among DCs

72. Flows of industrial goods, technology and investment among DCs have been accompanied by large, and growing movements of labour within the Third World. Estimates indicate that since 1973 Iran and Saudi Arabia have each received more than one million immigrants from DCs, and 350,000 or more have migrated to Libya, Kuwait and the United Arab Emirates: the major sources sending more than 100,000 people out, including Pakistan, India, Egypt, the Yemen Arab Republic, the People's Democratic Republic of Yemen, Afghanistan and Jordan; South Korea has also been a major supplier of skilled labour, mainly in the construction industries. While unskilled labour has predominated, skilled immigrants have provided a vital input to the industrialisation effort of the receiving countries. Migrants' remittances from these labour movements totalled some \$5.4 billion in 1977: Egypt, India, North Yemen and Pakistan each receiving over \$1 billion (constituting one of the principal foreign exchange earners). UNCTAD has, since 1975, carried out a number of case studies (India, Pakistan, Philippines and Sri Lanka), which focussed on the problem of the 'brain drain', or the reverse flow of technology from DCs to ICs, but which also provided information background to policy proposals for the inter-DC co-operative exchange of skills.^{1/}

1/ See 'Technology: Development Aspects of the Reverse Transfer of Technology', TD/239 for UNCTAD V in Manila, May 1979. The proposals contained therein are summarised below.

73. The latest UNCTAD estimates show that a rough total of about 420,000 skilled personnel ("professional, technical and kindred workers" according to the US Immigration and Naturalisation Service) had migrated from developing countries in the period 1960s to 1975/76 to the countries of North America and Western Europe: - the USA, Canada and the UK accounting for 75% of total South-North movement of skilled manpower. Out of a total of 285,000 skilled migrants to the three largest host countries in 1961-1975/76, scientists and engineers represented 29%. The magnitude of the 'drain' can be seen from the fact that for India, in 1975-76, the outflow of engineers represented 25% of the total numbers graduating, for Sri Lanka 18%, for the Philippines 11%. At the IC receiving end, engineers from the DCs represented 28% of the incremental stock of engineers in the United States in the early 1970s. In addition, 76% of them were in the most productive period of their lives, at the ages of 30-44. The imputed value of skilled migration (to be distinguished from measures of gains or losses) from all DCs in the USA, Canada and the UK in the period 1961-72 has been estimated at \$46 billion, or \$3.8 billion per year, an amount that is almost as large as ODA flows between these countries over the same period. These figures give some indication of the loss to the Third World in human capital, which could at least be channelled for their own collective gain.

74. Among the skilled personnel working in other developing countries, those with industrial and scientific skills represent a significant proportion, with doctors, nurses, teachers and accountants comprising large categories along with engineers: about half of the emigrant engineers worked in other developing countries, with the West Asia or Middle East region standing out as the largest receiving area. The studies also indicate the wide spectrum of skills involved, ranging from unskilled and semi-skilled to highly skilled personnel, with emigration having been actively encouraged by their home countries but in the absence of any kind of comprehensive policy framework, and relying on ad hoc, imperfect market arrangements. In contrast to the DC personnel who migrate to ICs, those going to other DCs tend to go for shorter periods, usually without their families, while the professionals among them tend to hold much more privileged and important functions in the host countries than their peers migrating to ICs.

75. The rapid growth in investible resources in some DCs and the rapid expansion of skilled manpower in others have provided greatly increased opportunities for South/South exchange in recent years. It is estimated that by 1980, if the CPE developing countries are excluded, the number of students enrolled in institutes of higher education in all DCs will have risen to about 15 million, or nearly 30% of the world total (a rise from only 10% in 1950). Given the large financial surpluses that have become available in some DCs, the greatest complementarities can be observed between skill-poor and resource-rich countries on the one hand, and skill-rich and resource-poor countries on the other. Countries that are poor both in skills and resources can obviously benefit from either of the above two categories, most of all through a triangular arrangement between all three. So far, however, opportunities for co-operation have not been actively explored in this way, due to traditional concerns of concentrating on capital and commodity flows, as much as to the dearth of information.

76. The important questions, in order to determine the interest in co-operation for skill exchange, are:

(i) To what extent output gains or a more efficient allocation of existing resources can result and

(ii) how the gains can be equitably shared between skill-importing and skill-exporting DCs.

For the first of these, the four major ways can be ascribed to:

(a) Third World increase of efficiency in resource allocation as a result of inter-DC migration following the removal of barriers to factor mobility.

(b) The existence of imbalance in the utilisation of resources argues for productivity rises when under-utilised capital and skills are matched with each other.

(c) The very high costs of secondary and third-level education to 'produce' professional and skilled manpower - and the large cost differentials between DCs argues for the planning and distribution of educational expansion among countries on the basis of comparative advantage.

(d) Collective self-reliance in industrial skills would be greatly enhanced if the skill-surplus countries oriented their supply to other DCs rather than to ICs, and the skill-deficit DCs satisfied their demand from DCs rather than ICs: this would have, at the same time, a significant impact on the potential for improved technology acquisition and generation within the Third World.

The second question on the distribution of gains between skill-exporting and skill-importing countries would mean, for the former: temporary unemployment relief, foreign exchange earnings from remittances (or capital transfer under a co-operative arrangement), fuller utilisation of its educational system capacity, and the eventual return of migrants with enhanced on-the-job learning in the 'appropriate' conditions of a DC: for the latter, the benefits would include access to skilled manpower on better terms, a more relevant set of skills and experience, greater choice in skill and source options, and an assured supply of skilled manpower on a long-term basis.

77. Various proposals for collective self-reliance in skills have been mooted on the basis of those grounds for co-operation, by the Fifth Conference of Heads of State or Government of Non-Aligned Countries (August 1976) and by UNCTAD/ Among them are -

(i) the creation of skilled manpower pools or data banks, to exchange information on occupational categories, job opportunities and prospective applicants;

(ii) co-ordination in education and manpower planning in order to organise educational investment and skill transfer among DCs on the basis of comparative advantage: also to establish joint Third World training institutions in particular disciplines on a cost-sharing principle between countries;

(ii) co-ordination in on-the-job training schemes:

(iv) specially designed technical assistance programmes administered by DCs, possibly through the TCDC arrangements established at Buenos Aires in 1978:

(v) establish joint consultancy agencies and services drawing on indigenous skills and resources, and growing out of DC experience in adapting and replicating technology, encouraged by giving preferential treatment to DC agencies in executing industrialisation programmes:

(vi) linking capital transfers from resource-rich/skill-poor countries with the supply of professional manpower from resource-poor/skill-rich DCs through joint financing of schemes or loans and grants:

(vii) harmonisation of the terms and conditions governing employment of migrants, perhaps through standard agreements on remuneration and security for different skill categories in labour contracts.

Proposals for co-operative action would have to face the constraints imposed by dealing with countries of different ideological hues and development levels, having traditional North/South links and entrenched interest groups among their own professional communities.^{1/}

78. In revising the current flows of resources among developing countries, two cautionary qualifications should be made, that warrant much closer analysis of the motivation and quality of the flows rather than of their quantitative significance. First, much of the trade, technology and capital flows are of a South/South nature more in appearance than in substance: to the extent that they are intra-firm in composition, and that these intra-firm transactions are guided by the headquarters decisions of North-based TNCs, they cannot be considered a genuine manifestation of collective self-reliance. To a much weaker degree, this qualification applies to the majority of technology transactions that concern 'unmodified' technologies, where the immediate DC exporter to other DCs may have acted simply as an intermediary in a North/South chain of transfers. Second, it is not entirely clear to what extent resources transferred from one DC to another have been of greater benefit to both parties than a similar North/South transfer, i.e. by being more suitable for local needs and conditions, by working in the direction of greater national self-reliance through greater local linkages and technological diffusion, and by being cheaper or otherwise better in its terms. Finally, how equitably have the benefits been shared between the various DCs engaged in co-operation?

^{1/} UNCTAD, TD/239, op. cit.

2.6 Self-reliance and Finance for Industrialisation

79. An acceleration in Third World industrialisation is difficult to conceive without recourse to substantial inputs of external finance. This statement should be qualified, of course, by the example of many countries that have successfully sustained high rates of economic growth in the past with very little foreign capital. Conspicuous are the cases of the USSR, the People's Republic of China, several of the East European countries since World War II, and Japan (barring the brief post-war reconstruction period). Given certain conditions, external capital inflows are therefore neither necessary nor sufficient for fast growth. Many of the DCs that started with similar levels of per capita income in the 1950s and experienced similar rates of per capita inflows of external capital have demonstrated very different growth rates since. The potentially negative impact of large foreign inflows has been well documented in terms of inducing excessively capital-intensive industries and technologies, stress on initial capital rather than recurrent expenditures, accelerated urbanisation, and raising the propensity to import consumer goods. In order to service their debt, countries are obliged to promote exports, and may be forced into an industrialisation path that is not consistent with their long-term development objectives. However, analyses of the actual patterns of development of most DCs show that they are unlikely to make the political and structural changes necessary for self-financed industrialisation in the near future, so that they would continue to need large external capital inputs for some time to come.

80. Although the majority of investment in developing countries in the past has been made through the use of domestic savings, industrial investment has relied more heavily on foreign sources of funds. The reason for this is to be found in the fact that a large proportion of the capital and intermediate goods required for industrial investment has not been available domestically, and export earnings have been insufficient to meet the associated demand for foreign exchange. At the same time, it has been particularly difficult to obtain concessional finance for the industrial sector, since the policies of official aid agencies, both bilateral and multilateral, have tended to reserve most of their funds for agriculture and basic infrastructure, together with a recent trend to direct grants and soft loans to the low-income regions and population groups). Consequently, the availability of external finance for industry has become particularly sensitive to the present debt status of DCs and, more especially, to the structure of that debt. To the extent that industrial output is unable to compete successfully in the markets of creditor countries, or the process of import substitution results in deterioration in the balance of payments, industrialisation is likely to aggravate the foreign debt position - and, consequently, to undermine national self-reliance - unless the debt structure can be improved through more favourable loan terms and better debt management.

81. In any event, it is commonly accepted that the huge increase in short-term commercial debt of the past five years - both export credits and private bank loans - cannot be sustained at the same pace in the future; by the end of 1977 they already amounted to about one-half of the total debt outstanding for the DCs as a whole. Although it is the debt structure rather than its absolute size that is the major

problem, the size itself is seriously understated because of deficiencies in the reporting system. The data by definition do not include short-term indebtedness (both commercial short-term debt and IMF drawings) and this gives a very inadequate picture of private debt from private sources at a time when the growing role of short-term credits for long-term financing is evident in many DCs. Moreover, there is virtually no information on the magnitude of the military debt, which is known to be large and growing for much of the Third World.

82. The relationship between self-reliance and external finance varies considerably between the numerous sources: aid, including grants and concessional flows carrying a 'grant element' above 25%; other forms of official assistance including official export credits and debt relief; direct foreign investment; export credits; portfolio investment and private bank loans.

(i) Aid has been closely linked with metropolitan-colony historical flows, military 'aid', tied purchases in the donor countries, paternalism, and, in general, political and economic leverage on national policies that have made inimical to the basic principles of auto-determination. Nevertheless, it remains indispensable for the resource-poor, low-income developing countries that can neither afford, nor have access to, the resources of private capital markets and direct investment. Aid, however, has been growing slowly - at about 3% per annum since the 1950s, and only a minor proportion has gone to the industrial sector.

(ii) DFI has been subject to some of the general disadvantages described above (paras 25-29): its specific relevance to self-reliance will be explored more fully below. In purely financial terms, the relative importance of DFI appears to be declining, and remains limited to a select number of DCs with high growth prospects and significant mineral and fuel resources. 'New' capital flows from DFI have to take into account the estimated 35% of investment that comes from the reinvested profits of affiliates.

(iii) Finally, private financial flows have acquired major significance only in the past five years, although export credits were offered in the 1950s to stimulate IC industries. The disadvantages of the latter lie in their short-term (3-7 years) maturities and tied nature, leading to large equipment imports embodying capital-intensive technologies. Private banks began their lending operations to DCs in the mid-1950s, but began to replace IC governments and multilateral aid agencies as the principal source (about 60%) of medium and long-term external financing for DCs in the mid-1970s (three-quarters of it to LDC governments or private sources guaranteed by them). The potentially unstable feature of this last component of external finance is the fact that Euromarket activities (accounting for nearly two-thirds of private capital loans to DCs; the market grew in net terms from \$15 billion in 1965 to over \$400 billion by March 1978) are outside the realm of control of both domestic monetary authorities and international official financial agencies. The maturity of Eurocredits is mostly less than 8 years, and has been shortening since 1975. By 1983, it is estimated that 95% of the current Eurodebt of all non-oil DCs will have become due for

repayment and that, by 1985, two out of every three Eurodollars borrowed will be used for Eurodebt repayments.^{1/} As indicated earlier, use by DCs of the Euromarket is highly concentrated, and only 15 DCs borrowed more than \$500 million each in the 1971-75 period out of a total for DCs of nearly \$30 billion (Mexico was the biggest borrower with nearly \$6 billion and with Brazil, Indonesia, Algeria and Iran, accounted for 60%). A recent study of eleven major DC borrowers in the Euromarket^{2/} shows that the attitude of international private lenders to determining the credit-worthiness of prospective borrowers is similar to that of foreign investors, concerned more with political stability, large market size and broad mineral resource base than with the quality of domestic economic management, or the use to be made of the loans. This arms-length feature of private bank transactions has been a major attraction for DC governments that dislike the economic surveillance attempts, politically weighted voting structures, and cumbersome bureaucratic procedures, of the IMF and other official multilateral and bilateral lending agencies. Furthermore, rescheduling of debt incurred in private markets takes place more discreetly and flexibly through 'rollovers' rather than through the broadcast paraphernalia of a major renegotiation handled by an aid consortium of governments, that is likely to seriously damage the borrower's credit rating for the future. Nevertheless, all the three major forms of external finance - aid, DFI, and private bank loans including export credits - share the characteristic that they lead to debts for the borrower, which undoubtedly signifies both economic and political dependence on the lender when they reach significant proportions of GNP, and of exports.

83. Controversies abound on the use of any single measure that would indicate the tolerable limits of vulnerability for a borrowing country, and ratios of debt service payments to exports or to GNP have been found unsatisfactory for that purpose. However, such measures have been sought in order to assess the risk of default rather than reflecting concern with the loss of autonomous goal-setting for the borrower inherent in piling up large debts. Several countries, such as Brazil and India, that have managed to accumulate large international reserves that can be used to provide working balances, and to act as a cushion against further payments deficits, may have found that their large debt obligations do not affect their credit-worthiness and negotiating capacity with external financial sources. It is effective debt management that enhances self-reliance while still having recourse to foreign funds; the important result is to avoid prejudicing the achievement of high rates of development investment, with the concomitant capacity to maintain high import levels. Countries that have become heavily dependent through debt do not risk default so much as their own prospects for growth by having to cut back on essential imports.

^{1/} M. S. Wionezeh, 'The LDC External Debt and the Euromarkets', World Development, February, 1979.

^{2/} P. A. Willons, 'Borrowing by Developing Countries on the Eurocurrency market', Paris, OECD, 1977.

84. The elements of debt management reside in operating on (a) the terms on which the debt had initially occurred, (b) the use made of the borrowed capital and (c) the external environment facing the borrower during the period of repayment. Part of self-reliance in financial matters may be defined as developing the abilities to manage debt, in various fields such as training, marketing, pricing and information use. Small borrowers, for instance, who are distant from the main financial centres in the North, have little information on the nature and changes of private financial markets, and have to turn to expensive and possibly inappropriate advice from investment and merchant banks that are not conversant with their development problems. The information required should enable borrowers to shop among alternative sources, to spot trends and market innovations: these might encompass trends in margins, maturities and fees related to the terms of loans, general trends in international liquidity, competing demands for loans from TNCs and OECD governments, and innovations in the standard form of contract. Borrowers that use international financial markets infrequently may not be able to distinguish clearly between international banks that follow different corporate strategies, with implications for the pricing and allocation of resources among DCs according to the importance they accord to the latter. Training in negotiating loan agreements, knowledge of mechanisms and regulations established by experienced DC borrowers (such as Brazil's Resolution 63), knowledge of IC government regulations that are increasingly constraining bank loans (such as country limits, ceilings on overseas expansion, rules requiring balance in foreign exchange) - all these can be invaluable for the small DC borrower. Also of importance is the potential for diversifying lending sources by going to non-traditional banking sources such as Japan or Germany (where traditional is continuity with the colonial experience) and reaching the 'second tier' of smaller banks involved in international lending. Similarly, some flexibility can be introduced into repayment schedules in order to improve maturities (e.g. 'balloon' repayments, or a fixed schedule subject to contingencies such as falling commodity prices).

85. It has been argued plausibly that it is national economic management that is decisive in managing debt efficiently, as shown by the very varied experience of developing countries that have faced the same adverse international circumstances in 1974/75. Brazil, for instance, has been successful in managing its very high debt (\$23 billion to private banks and \$14 billion public debt at the end of 1977) by holding imports steady and combining export incentives with a strengthening of import substitution policies. From 7% of GDP in 1974, the country was able to reduce its current account deficit to 2.9% of GDP in 1977, while maintaining an average annual growth rate of 7.5%. In Mexico, however, a large increase in government expenditures and high inflation rates increased the current account deficit from 2% to 5% of GDP in the period 1971-75. Subsequently, it had to undertake a major stabilisation programme that brought the rate of GDP growth down from an annual average of 6% in 1970-75 to 2% in 1976-77.^{1/}

^{1/} For a computation review of the policies of 18 DCs from different income groups during this period, see J. A. Holsen, 'Notes on the LDC Debt Problem', World Development, February 1979.

The ability to adapt rapidly to changing international circumstances is obviously central to debt management.

86. It is not surprising that Third World governments tend to prefer export earnings to other forms of external financing for industrialisation since no future payments streams are involved. Recent experience, however, has involved DCs in their heaviest bout of borrowing during a world economic recession that has not only slowed demand for their exports but has also incited DC governments to erect protectionist barriers, disproportionately directed against the manufactured products of DCs. IC creditors can hardly demand payment of their loans when at the same time they deny their debtors the means with which to do so. Trade and the condition of the world economy, as well as the development needs and policies of the developing country borrowers, should be the proper framework for resolving debt problems, rather than the narrow financial issues on their own. For the middle-income DCs, which account for over 80% of the present public debt of the Third World, the major requirements are therefore an expansion of the manufactured export trade to the North in the context of a general expansion of the world economy, together with increased domestic savings for investment as part of good domestic economic management. Unfortunately, there are few signs that the causes of global economic recession are likely to disappear over the next few years. The expansion of World trade fell to about 5% in 1977, after an average of about 9% in the previous decade and a 12% increase in 1976.

87. It is here that the concept of global interdependence between the two groups of industrialised and developing countries, finds its clearest justification. In brief, this derives from the current situation in ICs which face high rates of unemployment, low utilisation of existing productive capacity (mainly in the capital goods industries) and considerable liquidity in their financial markets. The middle-income DCs in turn face a serious liquidity problem in financing essential capital imports for their growth. In the period 1971-75, the relatively high growth rates sustained by the DCs (3% per capita per annum) were made possible only through a four-fold increase in their current account deficits financed mainly by commercial borrowing. This growth of external DC debt in turn served to moderate the impact of economic recession and external disequilibrium for the ICs through the extra demand for IC manufactured exports. According to the World Bank's 1978 World Development Report, the Third World absorbed 30% of the total manufactured goods exported by the ICs (the proportions were even higher for the US (34%) and Japan (45%). Estimated made by the University of Pennsylvania Wharton School's LINK model show that a reduction of three percentage points in the annual growth of non-oil producing DCs would result in a fall of one per cent in the annual growth rates of OECD economies. If it is commonly accepted that the same kind and pace of private bank lending to DCs cannot continue for the debt structure to remain manageable, new ways of matching short-term liquidity in international capital markets to the demands for long-term industrial finance in DCs have to be found: through a lengthening of maturities and an increase in capital flows from the OECD surplus and oil surplus countries, greater demand for capital and intermediate goods produced in the ICs, stimulating their economic activity, would be generated. It has been estimated

that approximately \$80 billion of OPEC investment surpluses are held in liquid form as bank deposits and government securities - about half of which could be converted into longer term assets: if this is added to the \$25 billion increment in German and Japanese reserves in the period end-1976 to end-1978, well over \$50 billion could be transferable, hypothetically, to DCs for investment purposes.^{1/}

88. In sum, the question of whether, to what extent, and in what form, increased international financial flows for DC industrialisation are consistent with national self-reliance, cannot be answered in aggregate terms. The proper use of these flows in order to promote the objectives of self-reliance depends more on the transformation of social institutions at the national level than on the appropriate design of international mechanisms: institutions that are directed to increasing the capacity to save and invest domestically and to phasing out the need for net transfers as quickly as possible. The pattern of industrialisation and composition of industrial output will determine the degree of dependence on imported capital equipment and intermediate goods for which foreign exchange would continue to be required. However, both on the supply and demand sides, issues of finance for industrialisation cannot be easily separated from issues of finance for the rest of the economy: consequently, financial self-reliance has to be a matter of national rather than sectoral economic policy.

89. The prime opportunity for South-based financial flows is evidently provided by the increased volume of resources available to OPEC members since 1973. It is well-known that the OPEC aid performance stands out in very favourable contrast to that of the OECD (and of the CPEs) at an annual average of over 2% of GNP for the 1973-77 period (\$5.5 billion disbursed in 1977) - compared with an average of 0.33% for DAC members (\$14.7 billion in 1977) and less than 0.10% for the centrally planned economies of USSR, China and Eastern Europe (\$0.73 billion in 1977). The major Arab donors - Saudi Arabia, Kuwait and the United Arab Emirates - provided more than 5% of their GNP for concessional assistance. Furthermore, most OPEC aid has been untied, its terms are intermediate between those of the DAC and of the CPEs, and it has been provided increasingly to non-Arab countries of the Third World (now more than three-quarters of the total number of countries receiving OPEC aid). In the early years, OPEC aid was given primarily as balance of payments support, to finance oil deficits or provide oil on concessional terms. The last few years have seen the establishment of a host of bilateral and multilateral institutions for mainly project lending.^{2/} Relatively little of this aid has gone to

^{1/} Address by Dr. Lal Jayawardera to the Sri Lanka Association for the Advancement of Science, "The Third World as an Engine of World Growth", Colombo, 4 December 1978.

^{2/} Apart from the OPEC Special Fund, the Kuwait Fund - established in 1961, - the Arab Bank for Economic Development in Africa (BADEA), the Arab Bank for Economic and Social Development, the Abu Dhabi Fund, the Islamic Development Bank, the Saudi Fund for Development and several others. Commitments by 1977 by the major institutions amounted to \$2.2 billion.

industry, most of it allocated to infrastructure and transport, agriculture, health and education. Increasingly, criteria for selection have emphasised social development and the impact on poorer groups and regions. The motivation for aid has, unlike much of the DAC assistance, been much more concerned with political interests and regional solidarity than with commercial interests and stimulating domestic production through exports (there is little to sell). China has for the past 25 years, contributed major sums in grants, loans and technical assistance (\$6.6 billion committed by 1977), with some of the best terms used by donors, and concentrated on medium- and small-sized projects in light industry, food processing, transport and agriculture. The oil-deficit countries of the Third World have contributed to development mainly through technical co-operation, offering scholarships and experts - prominent examples have been Cuba, Mexico, Egypt, Algeria, Pakistan, India, Taiwan, North and South Korea.^{1/} Overall, therefore, there can be no doubt about the substantial financial resources that many Third World countries have already demonstrated are available for the development of other Third World countries.

90. The potential for CSR in finance is very much greater than indicated by these aid figures. The massive surpluses generated annually by OPEC members, of the order of \$35 billion, are simply being deposited in North-based and North-dominated global institutions and banks, from which they are being lent again (but in ways that are now controlled by the North) to the South. The major quantum of South borrowing is de facto from other South economies via Northern intermediaries, using mechanisms such as commercial bank credits, IMF credit tranche and special facility drawings, medium- and long-term bilateral, international organisations and private development loans. The reason is that the prior concentration of major institutions, skilled personnel and information in the North makes it much easier and less risky to use the traditional channels. To do it directly on a South/South basis would not only involve difficult experimentation with new channels but also the initial identification of common interests between at least some lenders and some borrowers from the South. Given this objective, even the trend towards co-financing of OPEC aid (particularly Kuwait and Saudi Arabia) with non-OPEC sources of finance (106 such projects had been negotiated by March 1978 for a total of \$7.3 billion) inhibits direct South/South transactions by coupling Northern know-how and Southern finance.

91. Mutual interests between Southern lenders and borrowers in financial proposals for collective self-reliance may be stated in the following terms:

(i) the creation of alternative sources of financial supply and demand in order to diversify geographically and institutionally;

(ii) the lowering of costs by capturing the profits made by Northern intermediaries, and linking South/South aid with loans by using it to subsidise interest rates and provide loan insurance;

^{1/} Development Co-operation 1978 Review, OECD, Paris 1978.

(iii) direct lending which allows greater control over the pattern of fund use/ portfolio spread, in order to serve the lender's national interests, while it can also cut cumbersome and expensive red tape for the borrower:

(iv) the absence of a direct link between loans and the export promotion of Northern lenders and short-term commercial credit, is likely to mitigate some of the sharp price rises in Northern manufactured goods and services, thereby making it easier for the DC borrower to service the loans as well as assist the DC lenders in lowering their own investment costs:

(v) all other areas of South/South co-operation, whether in trade, or joint production, or joint technology development, or training, or joint services, require major financial inputs that can be better and more easily provided through direct transactions rather than by Northern intermediation. Any motivations that are dependent on feelings of solidarity would operate with special force here.

Proposals for mechanisms that draw on these interests are described at length elsewhere in the study. Examples that have received frequent airing include proposals for clearing and payments unions, common currency units, a Southern IMF, and direct commercial and investment bank linkages.

2.7 Self-reliance and Direct Foreign Investment (DFI) for Industrialisation

92. The concepts of direct foreign investment (DFI) and national self-reliance appear to stand as a contradiction in terms. Foreign investment proper defines a relationship where investments in a developing country are effectively controlled by the foreign sources, usually through an equity participation exceeding 25 per cent of a company's shareholdings. (Control, of course, can also be exercised through other forms of payment for transferred assets, such as licences for foreign technology - as above - management contracts, franchising arrangements and supplier contracts for intermediate inputs.) A country whose industrial structure is dominated by foreign investment, where the majority of industrial output is produced by affiliates of foreign corporations or by entities owned by non-residents, could not claim to be self-reliant. However, it is certainly conceivable for DFI to play a significant role in particular industrial branches without necessarily influencing the overall pattern and direction of industrial growth; moreover, if its use is consciously controlled and limited in ways that increase domestic capacities - either directly in the particular enterprises where it is found through skill transfers, or indirectly by mobilising domestic resources that would otherwise remain untapped, and thereby providing investible funds or intermediate goods for other areas of industrial production - it can make a positive contribution to national self-reliance. A discussion of DFI inevitably focusses on the principal channel through which it is transmitted, the transnational corporation (TNC) - which accounts for over two-thirds of all DFI - although governments, public enterprises and non-TNC private investors also undertake foreign investment. The policy principles that emerge from the following analysis of TNC activities, however, should retain their validity for other forms of DFI. They draw on the conclusions concerning the welfare impact of TNCs on host countries presented in paras 23-26 above.

93. It is the size, worldwide distribution, production know-how and concentration of human and physical capital that have made the transnational enterprises the most powerful source of investment in the world economy, with the ability to attract and deploy high-calibre personnel, worldwide procurement facilities and marketing networks, a financial reputation that can be used to obtain large quantities of capital, and immediate access to the parent company's accumulated and continually expanding store of research and development. However, it is also the main feature of TNC strength (its comprehensive contribution of investment inputs) that constitutes its major shortcoming from the viewpoint of DC host economies. The package approach of the TNC threatens to displace domestic efforts by inhibiting the creation and mobilisation of indigenous savings, enterprise, management and technology. The vast current literature on TNCs,^{1/} and the abundant debate regarding their control in various international fora,^{2/} give room for only a very selective summary here of those points that relate to self-reliance in DC industrialisation. The whole policy debate has been impossibly confused by the number of different actors involved, and by the conflicting nature of their interests: DC host governments, local enterprises, the TNCs themselves and their local affiliates, parent governments, national and international unions in DCs and ICs, and international organisations and agreements.. Most of these entities are far from monolithic in their perceptions. To take one example, host governments can be decomposed into several ministries, legislative bodies and courts, all concerned with the impact of DFI, but from different viewpoints.

94. At the outset four points may be highlighted that have helped to make recent debate concerning TNC-DC relationships both more complex and constructive at the same time:

(i) Awareness of the significance and speed of the changes in relationships brought about, *inter alia*, by: the diversification of DFI sources from the USA and UK to other OECD member countries; the rapid growth of managerial, technical and bargaining skills in DCs, both at the enterprise and government levels; the changing universe of cross-national enterprises through the entry of multinational state enterprises, particularly Third World multinationals and joint ventures; and the tendency of North-based TNCs to move away from equity participation towards outright technology sales and other forms of enterprise collaboration.

(ii) Continuing concentration of TNC activity in only a small proportion of Third World countries - those with growing markets and substantial natural resources; only rarely has cheap labour been of sufficient attraction for TNCs to set up processing zones in low-income, resource-poor DCs.

^{1/} A good review is contained in S. Lall and P. Streeton, "Foreign Investment, Transnationals and Developing Countries", London, Macmillan 1977.

^{2/} See H. Schwamm and D. Germidis: Codes of Conduct for Multinational Companies: Issues and Positions, ECSIM, Geneva, 1977.

(iii) The trade-off between controls and incentives which sets limits to the regulations on investing TNCs that host governments can implement before they constitute intolerable impediments to TNC corporate objectives: limits that depend principally - as far as manufacturing industry is concerned - on the profit-making opportunities offered by domestic markets.

(iv) The fact that the case for direct foreign investment has to be built on the grounds of obtaining access to their productive knowledge and marketing abilities - filling the managerial, technological and commercialisation gaps of DCs - rather than on their financial contribution (studies of the balance of payments impact of TNCs indicate that their net financial input is at best small, and costlier than other forms of credit).

95. The main threat to national self-reliance from TNC activities arises from the observation that there is no reason for the objective functions of developing countries and transnational corporations to match (although some interest groups in the former are likely to discover mutually beneficial concerns). The coherence and consistency of TNC behaviour in DCs must be judged in relation to the objectives, perceived interests and organisational of the global corporation rather than to the domestic productive system of the host DC economies. That these global corporations have developed production organisations, management technologies and marketing systems in order to meet conditions in the ICs where their major markets lie, and that they have transposed them to their DC affiliates with little modification is not surprising; judging by their success in the markets of most DCs, these systems appear to have matched the interests of controlling groups and existing demand structures, in spite of mass needs and factor endowments that might call for a different set of products, processes and techniques. Studies of management behaviour in TNC affiliates show that the major enterprise decisions are taken in the head office of the corporation, include those involving investment planning, budgeting and personnel appointments. The TNC tries to reduce interference from all governments, both home and host. On the other hand, the developing country pursuing a policy of self-reliance is concerned with the full utilisation of its domestic human and natural resources, allocating investments among sectors and products in a process that is internally determined according to social criteria. The conflict is particularly apparent in the kind of footloose industries that TNCs establish in order to assemble components or produce spare parts in a vertically integrated international structure: the processes at the DC end are low-skill and labour-intensive, and the host-country, rather than industrialising, is simply exporting labour-time, so that the much larger gains to the other factors such as capital, knowhow, enterprise, management and marketing, accrue to outsiders. Even if it could be argued that TNCs pursue global economic efficiency, governments are legitimately concerned with national efficiency, equity and autonomy. In practice, of course, TNCs do not seek to obtain the optimum allocation of resources over the world economy, limited as they are by their own particular and partial objectives, inadequate information, dynamic aspects of growth among nations, and the absence of a competitive structure. The most prominent feature of TNCs is their behaviour as oligopolists consequently, the distribution of benefits favours the TNC as producer-seller rather than the consumers in DCs.

96. It was pointed out earlier than foreign manufacturing investors have been principally attracted by access to the local market; they received great stimulus through the type of import substitution strategy followed by many DCs in the 1950s and 1960s, accompanied by the application of excessively high protective tariffs behind which inefficient industries were established, which not only inhibited the setting up of export activities and efficient forward linkages but also exacerbated income inequalities. Unfortunately, the 'infant' industry argument was inappropriately applied to the 'infant' affiliates of the giant international corporations. Instead of acting as an instrument for the establishment of a domestic industrial base, industry became denationalised through import substitution. Once TNCs have undertaken substantial investments in particular countries, they have been reluctant to develop alternative resources in other areas, to disinvest in existing areas, and to reinvest in others. This fact of resistance to rationalising production, has acted as an obstacle to one important manifestation of collective self-reliance, that of regional economic integration, as was demonstrated in the furious attempts by TNCs to block signature of the Andean Pact. The major national problem with TNCs and DFI in general, however, is that of control, since the location abroad of the centre of decision eludes local government control over its economic policies. Monetary policy is evaded through borrowing from the parent company: transfer pricing is a mechanism that can be used for avoiding taxation, foreign exchange regulations, anti-monopoly policies, price-control etc; as increasing proportions of foreign trade become intra-firm, trade too is dictated by the parent company, whether procuring inputs or marketing outputs. 'Taming' the TNC for development, means re-exercising some element of national control over production and investment decisions. All this refers, however, to rectifying the deficiencies.

97. More positively, developing countries have to make their greatest effort in transferring to themselves some of the capabilities for which TNC have become an indispensable source: technological know-how and marketing. Earlier remarks emphasised the great concentration of R + D expenditure and technological innovation in industry in the hands of the TNCs. This is particularly the case since most of the TNC R + D expenditure is on the 'applied' side, in order to produce marketable innovations from scientific advances. The R + D effort of TNCs may be divided into:

(a) genuine innovation or technical progress through discovering new processes and products and

(b) product differentiation, which is a defensive activity concerned with developing marketing advantages over rivals through small improvements in existing products.

Their success in the technological area results from several advantages over smaller firms: economies of scale in R + D; extensive marketing networks to spread fixed costs and risks widely; access to government and private finance; ease in obtaining patent protection; the ability to use restrictive, oligopolistic practices such as cartels and pricing conventions; and the co-ordination of technological activities across related industries, including the control of competitive technologies.

Together with marketing, technology gives TNCs their main driving force for expansion.

The market power of TNCs is derived from their activities in market research, in advertising and promotion (need fulfilment and need creation), and in distribution. Advertising, the pushing of brand names, and product differentiation have been mixed in the promotion of innovations made by the TNCs and have added greatly to their ability to overcome smaller rivals that cannot cross the threshold of size required for effort on this scale. In a TNC's negotiations with DC governments, it is these advantages in technology and marketing, making its operations superior to what the host country could do by itself, that give it the upper hand.

98. On the side of the host country, empirical studies have demonstrated that fiscal concessions or other incentives have little influence on the investment decisions by TNCs.^{1/} On the other hand, the host economy's growth prospects are of major importance, so that national macro-economic policies and sectoral strategies and plans that govern the shape and duration of investment are the principal bargaining instruments, on the basis of a national economy that is strong enough to attract the investor. Opposing views that have to be accommodated in the bargaining process include (a) for the host country, that DFI is too costly in its balance of payments effects; too costly in terms of the prices it charges for technology and marketing through its oligopoly power, that it inhibits local entrepreneurship by its advantages of size and credit rating; that it escapes national economic control and may act as an instrument of foreign policy and culture and (b) for the foreign investor, that it requires a high and secure return on investment, investment guarantees and insurance to reduce risk, lower levels of corporate taxation, and majority ownership (hesitancy towards joint ventures or issuing shares in local markets).

99. The important pre-requisite for a DC government wishing to enter the bargaining process with some chance of success (facing as it does a large enterprise with carefully elaborated strategic objectives world-wide) is to have a very clear formulation of its domestic industrial strategy (together with the appropriate intra-departmental co-ordination and institutional infrastructure enabling it to implement that strategy in a consistent fashion), which clearly indicates what the desirable role for DFI is, in what branches or sub-branches of industry, and under what general conditions. This kind of national planning control, which indicates a certain stability of economic and social conditions for the foreign investor, may well be welcomed by the latter in preference to a totally laissez-faire attitude that presages instability and uncertainty in the future. To be able to present a clear position on the proper role for DFI in its industrial strategy, the host government will have had first to determine whether the investment required can be obtained more cheaply without DFI, e.g. through foreign loans: it will then have to judge the results of the trade-off between equity control and other forms of corporate dominance in order to determine what option will yield the best returns at lowest risk and cost: it will have to have available the results of sectoral analyses of past effects of foreign investment in the industrial sector and

^{1/} See G. L. Reuben et al, Private Foreign Investment in Development, Oxford 1973.

on the particular branch in question (effects on income, employment and skills, market structure, local entrepreneurship and linkages with domestic enterprises): the impact of past legislative structures on particular aspects of foreign investment, such as restrictive business practices: and the results of cost-benefit calculations at the project level. Together, these should give a sufficiently comprehensive view to be able to determine the upper and lower limits of the bargaining range that the government would find acceptable and consistent with its overall retention of decision-making power.

100. The principal macro-policies that are involved at the host country end include conditions governing equity ownership, tax and subsidy measures affecting foreign investments, protection, policies influencing technological assets and services, measures to control transfer pricing, control over restrictive business practices and the degree of competitiveness in the sector, and measures to influence linkages with the domestic economy. The essence of any government strategy to use DFI while fostering self-reliance must be to internalise and diffuse within the country those useful assets that the foreign investor has to offer. The equity participation itself can be subjected from the start to joint venture agreements (where some local control can justify excess costs over foreign controlled ventures on ground of infant factors, e.g. forming 'infant' entrepreneurs, infant consultancy and engineering firms, infant capital markets, etc.)^{1/} or 'fade-out' arrangements whereby the foreign equity proportion is reduced according to a specified schedule over an agreed time-period. The same idea of fade-out or its reverse, drawing-in, can be extended to other aspects within the contract such as the increasing use of domestic input suppliers, domestic skills and domestic management. Performance guarantees similarly can be extended beyond technical functioning (usually applied to turnkey sales) to diffusing technical knowledge and training domestic personnel.

101. If it is considered that it is the technological asset that is the most valuable element for transfer, what becomes important is unbundling of the technology package to enable local personnel to acquire knowledge of the production processes as fast as possible, and to be able to use that knowledge without hindrance after the initial contract period is terminated. This will ensure that repetitive imports of the same technology will not be necessary, if there is an effective government policy of diffusing that knowledge within the country to other enterprises through training and other financial support. Legal and institutional arrangements are necessary to back up individual DC negotiators at the project level to enable them to convince the foreign investor to part with his technological knowhow and design capability. In return, of course, the investor has to be assured of reasonable profit from a particular market. Other measures that can encourage DFI include improvements in administrative efficiency and bureaucratic procedures for dealing with foreign investment, incentive schemes, measures to avoid double taxation (arranged internationally) and information supply about the country's future plans and policies.

^{1/} C. V. Vaitsos, 'Foreign Investment Policies and Economic Development in Latin America', *Journal of World Trade Law*, 1975.

102. The last of these (information about host economies) is considered particularly important for attracting small and medium-size foreign investors. There has been a common presumption that DCs might benefit more from DFI that is not handled by TNCs, to avoid the features of dependence and dominance that appear to accompany DC-TNC relations. At the same time, several IC governments appear favourably disposed towards providing their small entrepreneurs with financial, training and other encouragement to invest in developing countries, perhaps as part of the industrial restructuring process occurring through technological change. Various conceptual difficulties are associated with this notion: what is 'small' in an IC context may be very large in a developing country: there is inadequate empirical evidence to show that the welfare impact of non-TNC foreign enterprises will necessarily (by virtue of their size) more favourable to the host economies, or at any rate sufficiently preferable to outweigh the disadvantages of not possessing equal access to frontier technologies, world-wide markets, capital sources etc. as the TNCs; finally, it may be the size and oligopoly features of TNCs that allow them to invest abroad in the first place: in other words, the small enterprise would have to receive massive subsidies from either home or host governments, or both, to accept the high costs and risks of investing abroad and to be able to overcome the natural advantages of domestic competitors, and these subsidies might make the net contribution negative. It has been pointed out that manufacturing investment abroad requires that the investing firm possess some source of oligopolistic advantage (usually marketing and/or technology) to offset the intrinsic disadvantage of foreign operations. This comprises factors such as distance and difficulties of communication, linguistic and cultural differences, political uncertainty and risk of expropriation and lack of knowledge of local market conditions. In addition to marketing and technological power, TNCs also have advantages in their access to capital and to raw materials, in economies of scale, in bargaining and political power, in superior managements and in coping with exchange risks. These advantages have a cumulative and dynamic effect on the expansion of TNCs through the experience of rapid growth within the home country, widespread integration over countries permitting flexibility in the transfer of funds and knowhow, avoidance of taxes, the tapping of markets in different countries, diminishing costs of entering new markets after a certain level, with increasing knowledge, bargaining power, confidence, 'fall-out' effects of advertising, and the spreading of risks.^{1/}

103. The range of considerations outlines above, that host countries should take into account in dealing with foreign investment, is relevant to different sources of DFI, whether these are small IC enterprises, public enterprises from centrally planned economies, or Third World multinational enterprises. If the basic vetting principle is that of improving national capabilities and internalising the assets of foreign sources, mechanisms have to be employed that shift control over production and investment decisions to national centres of decision-making, whatever the nature of the foreign enterprise.

1/ S. Lall and P. Streeton, op.cit., pp 18-28.

2.8 Multinational Production Enterprises

104. The past decade has provided valuable experience with problems involved in the creation and operation of Third World multinational production enterprises. These are of several types, ranging from predominantly private Third World transnational corporations, with headquarters in a single DC, similar in structure and operation to North-based TNCs, joint ventures between private or public enterprises in particular DCs, to conglomerate production ventures where decision-making centres remain in two more developing countries, whether under private or government control. Examples abound of the commonest form of co-operation, the joint venture. Multinational enterprises with headquarters in South Korea, Taiwan and the Philippines are expanding construction activities in other DCs: the Latin American Economic System (SELA) of 25 countries has decided to establish agri-business, capital goods and low-cost housing multinationals in Central and South America: India has set up manufacturing joint ventures in Algeria, Iran and Libya. The potential for state-owned mineral or petroleum-based corporations in resource-rich DCs to invest abroad is obviously very great (as shown by the intentions of the First Arabian Corporation), but the NICs of Hongkong, Singapore, Taiwan and Korea have undertaken far more foreign investments so far: several DCs have built on the experience of growth in their home markets, such as Brazil, Mexico, Argentina, and the Philippines, and they have moved increasingly into technologically complex areas: e.g. Taiwan in electronics, Singapore in oilrig construction, Brazil in light aircraft manufacturing. An important characteristic of Third World multinational activity has been the overseeing role of trading corporations. "The 'general trading companies' of South Korea, fashioned in the image of Japanese Zaibatsus, are a good example. Their charter is quite specific: (1) to penetrate domestic and foreign markets (2) to establish a global distribution network and (3) to finance smaller Korean companies that act as suppliers. With proper guidance, these quasi-public monoliths have been directly responsible for the lion's share of Korea's economic success. The \$1.3 billion Samsung Group, for example, maintains a competitive presence in 29 countries - building hotels, refining sugar, and overseeing many other businesses. Since 1970 it has averaged slightly less than 50% growth in annual revenues, and today Samsung accounts for approximately 4% of South Korea's gross national product." ^{1/} The same article points out that DC efforts in promoting multinationals tend to opt for some version of "Japan Inc.": a strong coalition of business, government and labour, which involves a leading role for the government and public sector 'to plot their economic offensives'. The joint venture approach of pooling resources, access to markets and realising large-scale economics allows these enterprises to reap the advantages of world-wide operations without sacrificing individual national identities, and makes them quite different from the traditional TNC whose global strategy is mapped from a single corporate headquarters. Regional coalitions

^{1/} D. A. Heenan and W. J. Keegan, *The Rise of Third World Multinationals*, Harvard Business Review, January-February 1979.

are being promoted through ASEAN and in the Middle East (e.g. the Triad Holding Corporation), Third World multinational banking enterprises are growing in parallel with the production units, and 'reverse takeovers' by Third World investors in ICs by acquiring controlling interests in older North-based TNCs are increasingly evident: these are all elements of new trends in the growing importance of Third World multinationals.

105. The growth of DC multinational production enterprises raises questions about their motivating origin, possible impact on DC industrialisation and development, and policies to orient their future development in accordance with the objectives of collective self-reliance. Pressures on DC investors to take their operations abroad seem to come from a mix of several factors: the inadequacy of domestic markets, circumventing tariff and non-tariff barriers to their exports to ICs by producing in other DCs, the search for cheap labour, diversification of risk and avoiding fiscal intervention by home governments, shoring up market positions against locally entrenched TNCs. Whereas TNCs investing in other countries rely on their technological and marketing power and show their interest in jumping tariffs, DC investors are particularly concerned with diversifying risk, exploiting the presence of business associates in DCs and counteracting the constraints of the home market. In considering the development impact of DFI from DCs, one of the problems for capital scarce economies is that it represents a serious drain of national capital for the home economy although it may provide a profit for the private entrepreneurs involved - as distinct from any favourable impact on the export of goods and services. It was indicated earlier that preliminary evidence points to DC host economies benefitting more through DC foreign investment by obtaining modified technologies that made fuller use of domestic labour, capital and raw materials (efficient use of second-hand machinery, lower capital-labour ratios, fuller utilisation of installed equipment); there is less propensity on the part of DC foreign investors to import raw materials, they record lower rates of profit repatriation, lower payments for royalty fees, and less foreign exchange expenditure on imported machinery, - particularly from ICs - as well as on expatriate salaries for technical and managerial staff: they also appear to concentrate less on product differentiation, advertising and brand-name promotion.^{1/}

106. The barriers to market entry by Third World multinationals are many, divided into the categories of legal, economic, political and cultural - and which frequently operate in both home and host countries. The legal barriers tend not to discriminate between sources of DFI, and in fact penalise intra-regional or intra-Third World investments if specific provisions such as double tax treaties have been negotiated only with Northern countries. Economic barriers include inadequate information on market possibilities, and the prevailing oligopoly structure of host markets, particularly in those industries where the nature of the production process encourages concentration and TNC operations. Political and cultural barriers encompass fears of domination by large neighbours, resis-

^{1/} The evidence for these conclusions is summarised in O'Brien, Hasnain, Lechuga-Jiménez, op.cit., pp. 26-39.

tance to joint ventures by the military, hesitancy in obtaining technology from other 'underdeveloped' countries, and the saleability of the 'foreign-made' label brought by globally recognised trade names. DC investors, if they are to successfully penetrate these barriers, have to operate principally through price competition, based on production advantages that derive from experience in tackling the same kinds of problems, shared by partners in an inter-DC joint venture. The fact that the initiative for establishing Third World multinationals remains in the hands of a very few DCs (mainly the NICs) also presents dangers to collective self-reliance unless special protective measures can be built in for the weaker participants and until competition from a wider range of DCs can be introduced. Policies to assist the process of forming Third World multinational enterprises, as an important element of CSR, need to set up appropriate intergovernmental agreements and legal frameworks for facilitating their operation. Approaches can range from market integration and sectoral planning within formal integration groupings to informal institutional arrangements, using Third World servicing and consultative bodies, to provide inputs and markets. Any co-operative endeavour has to ensure that DCs maintain effective control over the operation of such enterprises, requiring a careful vetting of the ways in which financial, technology or managerial resources may be obtained from non-DC origins.

2.9 Concluding Remarks on Self-reliance and International Resource Flows

107. To summarise the underlying theme of this section, national self-reliance has been discussed with reference to the four main areas where international resource flows for industrialisation take place: trade, technology, finance and direct foreign investment. The functional discussion should have made it clear that national self-reliance is not viewed as an end-state, so that one might be able to point to a country that can be said to have reached national self-reliance at a given moment in time (although countries can certainly lie along a ranked path, so that some are qualified as more self-reliant than others: such a scheme, however, would obviously stress the importance of given factors such as size, resource endowment, income level, etc., and one would descend to the trite observation that some countries are intrinsically more self-reliant than others, irrespective of national effort). Instead, self-reliance is seen both as a dynamic process and as a guiding or motivating principle. It can be used, therefore, in the formulation of national industrialisation strategy and policies, at the same time as it can be used as a lens through which governments and other actors can view any proposal for international industrial co-operation. The simplest criterion would be that of deciding whether the country's participation in a particular co-operative proposal would enhance national capabilities, base itself on the fullest possible use of national resources, and thus contribute directly to national self-reliance. Choices, however, will usually not be so simple since various trade-offs in self-reliance are likely: between the present and the future, between the different branches of industry: between one functional area of co-operation and another. For instance, DFI may be welcomed today in order to acquire technologies that will enhance the local capacity for future generation of technology; similarly, loans for setting up capital goods industries should allow future autonomy of production at the expense of current financial dependence (that should be temporary); evidently, one has to examine the expected

future benefit and cost streams to judge whether the extent of reliance on foreign sources is likely to diminish. To turn to the concept of collective self-reliance, joint action by several countries can ensure a reasonable sharing of benefits only if it is based firmly on the principle of national self-reliance for the participants. Without this foundation, collective self-reliance can become a new slogan for disguising exploitative relations between unequal partners that will generate further underdevelopment and ill-feelings among developing countries.

108. The primary objective of collective self-reliance has been stated as the liberation of the Third World countries from external domination, with maintenance and strengthening of Third World unity as the only instrument available for that liberation. The call for unity, a unity of opposition, is made in full recognition of the diversity among the 117 members of the 'Group of 77', as separate nations with very particular interests. "For it was our separate nationalisms which caused us to come together, not the ideals of human brotherhood, or human equality, or love for each other..... It was practical experience of the fact that legal independence did not mean economic freedom which made most of us think in terms of co-operating with others similarly placed. But our diversity exists in the context of our common and over-riding experience. What we have in common is that we are all, in relation to the developed world, dependent - not interdependent nations. Each of our economies has developed as a by-product and a subsidiary of development in the industrialised North, and is externally oriented. We are not the prime movers of our own destiny. We are ashamed to admit it; but economically we are dependencies - semi-colonies at best - not sovereign states. For the reality is that the unity of even the most powerful of the sub-groups within the Third World is not sufficient to allow its members to become full actors, rather than reactors, in the world economic system. The unity of the entire Third World is necessary for the achievement of fundamental change in the present world economic arrangements."^{1/}

109. Nyerere went on to state that unity in negotiation had to come from a position of steadily growing power, created as a result of economic co-operation, as in some of the areas described above. On any development problem, the approach should be one of first asking "What can we do among ourselves, for ourselves?" as the criterion of collective self-reliance. The conditions, however, for CSR efforts to be successful is that they be based on three underlying principles: - "That there is, on balance, equal benefit for all the participating Third World countries in each package of co-operation. That we treat obligations - financial or commercial - to each other as seriously as we treat them to the rich and powerful nations, or even more seriously. And that we should all give preference to Third World institutions when these compete with those of the industrialised world."^{2/}

^{1/} Address by President Nyerere to the Fourth Ministerial Meeting of the Group of 77, Arusha, 12 February 1979.

^{2/} Nyerere, *op. cit.*, p. 6.

110. The same Arusha meeting of the Group of 77 explicitly recognised the dangers that increasingly threatened the unity of the Third World. These consisted not only in the 'divide and rule' policy of the North, the offering of select benefits and concessions to some members and the carrot of a special relationship to others (e.g. co-opted into joining the same strategic clubs): but also in the emergence of new patterns of dominance and dependence among developing countries themselves. As economic disparities widen between developing countries, the Third World would appear as an overlapping continuum with countries of the North and East than as a bloc with common problems and interests. Finally, the impending dangers of a major global economic recession would exert enormous pressures on individual developing countries, in a world of scarcity, to make their own bilateral deals with some of the rich countries in order to protect market shares or guarantee essential inputs for their own prosperity. Nascent sentiments of Third World solidarity would have to face the acid test in forthcoming years.

CHAPTER 3: IMPLICATIONS OF ENDOGENOUS GROWTH FOR NATIONAL INDUSTRIALISATION POLICIES

111. The assessment of Third World industrial performance presented in Section I^{1/} led on one side to a perspective on international industrial co-operation based on the twin concepts of national and collective self-reliance. On the other, it has prompted an awareness of the policy requirements at the national level for a more balanced, industrial pattern that will rectify the major deficiencies of past growth trends and permit a healthy absorption of external resources. The link between international and national change was clearly identified in the Arusha declaration of February 1979:^{2/} "Developing countries perceive the structural changes in the international economic system as being significant and essential for creating the external environment conducive for carrying through the socio-economic and institutional transformation within their societies which will rapidly modernise and expand their production system, increase their technological capability, promote their self-reliance, eliminate mass poverty, and establish an equitable social order." The corresponding internal responsibility of developing nations to undertake that transformation has, at the same time, been explicitly recognised in the formulation of the concept of national self-reliance.^{3/}

112. The UN Committee for Development Planning at its tenth session summarised the indictment of current DC patterns of industrialisation in the following words: "In the past few years, in thinking about development, industrialisation has come under a cloud. It is charged with having led to neglect of agriculture. It is charged with at least having failed to solve, perhaps with having aggravated, the problems of mass poverty and under-employment of the poor countries. It is charged with having aggravated the foreign-exchange constraints on development without generating adequate offsets to those constraints through export expansion and/or import substitution and/or attraction of foreign transfers. Industrialisation is charged also with aggravating urban concentrations in the poor countries, on the one hand widening the urban-rural, "dual-economy" gap in many countries, on the other hand failing to sustain the quality of life for the urban poor. Industrialisation is charged with pollution, with befouling the environment. And lastly, now that people have become conscious that the world is finite, some charge that the pattern of world-wide industrialisation which the countries of the world collectively project is inconsistent with the earth's scarcities of non-renewable resources." Following their review, the Committee suggested that "industrialisation can and should be explicitly 'people-oriented'. Plainly, this does not mean that one pattern of industrialisation can be prescribed for all countries, regardless of their size, location, preferences or other characteristics, or that one brand of industrial strategy is appropriate for all industrial stages. But there are certain industrial choices that appear more consistent

^{1/} Paragraphs 8 - 28 above.

^{2/} Op.cit., paragraph 39.

^{3/} Paragraph 29-30 above.

than others with priorities that seek early and substantial inroads on mass poverty and unemployment, that recognise the importance of agriculture, that aspire to a more equitable and humane way of life for whole populations in a context of global as well as national resource scarcities, and that, to these ends, would pursue optimum economic efficiency. ^{1/} Recognition of the need for change requires an eclectic approach; it does not mean a rejection of past strategies and a totally new orientation with visions of pastoral bliss or 'small is beautiful', but an incorporation of new elements in a mix that has many of the old features worthy of retention. In any case, there can be no 'clean slate' beginning but a slow and costly transition once there is agreement on the need for fresh approaches. One may plausibly argue that past patterns have been too imitative of the paths of the present industrialised countries, too much of a standard copy; and that what is now required is a multiplicity of approaches based on conscious understanding of the particular combination of technologies, products, enterprise forms and administrative systems most suited to each DC at a given period in its history. The basic thread running through these approaches, however, will be common to all of them, in paying priority attention to the satisfaction of the primary needs of the population majority, in making the fullest possible use of indigenous human and natural resources, and in promoting a growth process that draws its inspiration from within the national society and culture and relies, in the first instance, on local efforts for self-help. It is this common thread that allows one to speak of an endogenous industrialisation process for the entire range of developing countries.

^{1/} United Nations Committee for Development Planning, Industrialisation for New Development Needs, April 1974, UN, E.74,11.A.4.

CHAPTER 4: ALTERNATIVE NATIONAL "STYLES" OF INDUSTRIALISATION AND ATTITUDES TO INTERNATIONAL INDUSTRIAL CO-OPERATION

4.1 Strategies and Styles

113. The previous section has dealt with objectives and industrial policy considerations whose underlying principles of promoting national self-reliance have been assumed to be broadly shared by all developing countries. The need for industry to contribute directly to development goals that are 'people-centered', for greater inter-sectoral integration, and for greater efficiency through close attention to factor endowments and sensible pricing and commercial policies - these have been highlighted as essential to all self-reliant industrialisation efforts. Together with the necessary 'first steps' of any programme of industrialisation, such as the building up of physical and administrative infrastructure and training for managerial and technical skills, these would constitute the main body of any industrialisation strategy, understood as a composite of objectives, investment allocations and policy measures, and concerned primarily with issues of national economic management. These considerations, however, do not illuminate the very considerable differences that inevitably mark the various 'trajectories' of industrialisation followed by 120-odd developing countries and which indicate the scope for co-operation among countries. Although useful as general guiding principles, they fail to indicate the complex reality of the political economy of industrialisation, the vital interaction between political choices, social and economic structures. It is only the latter that can give a flavour of actuality to national decision-makers from countries already embarked on different trajectories. The elaboration of a comprehensive political economy of industrialisation, even if it were feasible, is totally outside the scope of the present undertaking: what is attempted is a brief abstraction of those elements that serve to give substance to a typology of developing countries related to issues of international industrial co-operation.

114. What is observable in the industrialisation behaviour of DC governments over several decades is not the pursuit of consistent sets of planned objectives, resource allocation decisions and policy measures that might be considered to constitute national strategies. Instead, one is often confronted with a series of ad hoc responses to external and internal developments and shocks. Various attempts at long-term planning have failed, or had to frequently change direction in order to cope with changing circumstances beyond the control of individual national governments. This is certainly true of the so-called "classical strategies" of export promotion on import-substitution industrialisation: first of all, these represent trade regimes and commercial policies (in the sense of emphasising an 'outward' or 'inward' orientation in the market-seeking behaviours in developing countries), rather than the whole gamut of industrialisation issues. Second, as indicated elsewhere, they do not constitute alternatives for different developing countries so much as commercial policy phases for the same developing countries at different stages of their industrialisation, or reflect alternative policies followed in different branches of industry: for instance, a country starting with import-substitution based on internal market demand expands to export promotion when domestic market limits are reached; or

import-substitution policies may be followed by the same country in capital-goods production while export promotion is undertaken for consumption goods. Third, even as commercial policies, they have frequently emerged as responses to external constraints rather than as national choices: sudden or secular changes in the state of world demand for DC goods and services have either forced or encouraged DC governments to look inwards or outwards for their markets.

115. Consequently, industrialisation trajectories may be described much more realistically as 'styles' rather than 'strategies'. A style conveys a notion of behaviour which is too imprecise to be defined through a select number of standard measurable criteria, but which is, at the same time, clearly recognisable, identifiable. Moreover, a style emerges over a lengthy period of time that usually spans the life of several governing regimes and development plans. An industrialisation style stems from a blend of basically three elements: (a) the actual endowments of a country, broadly construed as the market size, natural resource bases and production structure (particularly the relative shares of subsistence agriculture and urban industry in total commodity production): (b) those developments and industrial policy objectives for the country articulated by the ruling groups as a reflection of political choice and (c) the prevailing social and economic structures of the country, including the relative positions of power of different social groups and occupational categories. Since (a) is taken as given by decision-makers in the medium-term, the element of choice in moving between different industrialisation styles is basically a political one.

4.2 Three Alternative Styles of Industrialisation

116. The particular characterisation of alternative styles used here has been made in order to clearly bring out the scope for international co-operation. For analytical purposes, differences rather than overlapping features have been emphasised, so that some caricature of reality is likely to have occurred. Style A may be termed one of external responsiveness (Externally Responsive Industrialisation): industrialisation behaviour that is essentially reactive to changing international economic conditions and to decisions taken by actors outside the country. Its position is analogous to that of a price-taker rather than price-maker in a commodity market, and conditions in the international market place are assumed to approximate perfect competition. Style B is one of industrialising along lines designed to promote national and nationalistic goals (National Goal-Focussed Industrialisation), where nationalism is viewed as a consumption good (a desirable end per se) and industrialisation seeks to enhance the status and power of the nation-state as an entity in the international system. In contrast to A, style B seeks to act as a price-maker in an international market that is viewed as oligopolistic: it represents an aggressive stance towards other actors in the global economy. Style C is concerned with the promotion of an industrialisation pattern which is determined by social priorities (Social Priority-Determined Industrialisation) within the country, so that relationships with other actors in the international economy are sub-ordinated to the industrial needs of the local population. The industrial directions pursued by these three may be further elaborated.

117. All three styles of industrialisation strive for economic growth and stress industry's contribution to growth, but there are differences in the 'purity' of the growth objective. Style A goes all out for maximum GNP growth rates, and manufactured exports are viewed as the main driving force of that growth. Any industrial pattern that is shaped by external demand to meet that objective is likely to be encouraged. Style B is concerned with economic growth as one element of national power: as there are other elements, however, such as the size, comprehensiveness and military capability of the industrial structure, the sacrifice of some growth for gains in key industrial sectors may be acceptable. Style C is preoccupied instead with the composition of final output of manufactured goods, and with the relations of production: industry's first objective is one of satisfying the minimum needs of the population majority in the shortest possible time, but the way in which that production is undertaken - to ensure full participation and employment - is considered equally important. The potential trade-off between these objectives and GNP maximisation in the short-term is explicitly recognised.

118. Styles A and B are similar in that they both take the prevailing distribution of assets and income within the country as given, with the resulting patterns of industrial demand subject to only gradual changes in the process of growth. Style C, on the other hand, not only recognises the need for the equitable distribution of productive assets and incomes as a prerequisite for its industrial growth path, but is also prepared to undertake radical structural changes to promote such distribution - recognising that a one-time redistribution may not be adequate, and that the process of industrial accumulation may require periodic re-levelling attempts. The difference in decision-makers thus becomes obvious in the three styles: Style A is characterised by private entrepreneurs acting on their own in response to international market signals, with very little interference from the state, in a capitalist system of accumulation: style B reflects the common situation of a mixed economy with the state and the public sector acting in close conjunction with private enterprise under some degree of planning and central control; and style C represents an economic system where the means of production are socially owned and where the system of resource allocation relies more on physical planning than on price signals. The degree of 'porousness' of the three styles in relation to international actors and resource flows correspondingly ranges from being wide open in style A, to selective openings for style B, and a complicated system of valves and taps for carefully regulating the external relationships of style C.

119. The exogenous factors related to country endowments play a role in affecting the choice between styles A and B: in order to follow style B successfully, the country has to be endowed with a minimum size of domestic market and possess significant natural and human resources: between the two, a small resource-poor country is likely to have to follow style A. On the other side, if a big developing country has a high population density and a large agrarian base engaged in subsistence production, it can hardly follow style A in being simply "externally responsive": the extent to which it can gear its economy to external demand is likely to be severely constrained by the subsistence floor of its agrarian base as well as by the low level of exchange relations and monetisation of the economy. Style C, however, represents more of a political choice and

requires a major break with the distribution of power that prevails in most developing countries, while it is less related to questions of size and resource endowment. It assumes, moreover, that style C countries are able to either steer clear of super-power interests or successfully play them off against each other, since the ability to carefully regulate external contacts is critical to its purposes.

120. In further examining the characteristics and implications of the three alternative industrialisation styles in turn, the following issues of relevance to the extent and form of external co-operation may be discussed for each of them:

- (i) The external stance of the country and the nature of its links with the international system. Included are the country's attitude towards external actors and particular sources of co-operation (governments of North or East, public sector corporations, TNCs, etc.) and its general interest in co-operation with other DCs and ICs.
- (ii) The role of the state and national industrial policies.
- (iii) Those characteristics which the national economy would have to develop in order to industrialise successfully by pursuing the 'style' in question, for the route to be feasible and effective.
- (iv) The nature of the associated industrial structure and pattern.
- (v) The development impact and repercussions on national society.
- (vi) The nature of risks, both external and internal, open to the pursuit of each style, and the potential for international co-operation to reduce these risks.

4.3 Industrialisation Style A (Externally Responsive)

121. (i) A prominent characteristic is the 'open-door' attitude towards external actors and flows. The trade regime followed is one of free trade and attempts are made to integrate fully with the international system. The country accepts its position in the international system and agrees to observe the established international 'rules of the game', and tries to exploit its comparative advantage - principally cheap labour-time - in manufacturing export. As the system is controlled by and based on the operation of private enterprise, links with external actors are arranged through the market, with commercial banks and foreign investors, mainly TNCs. Conditions are made as attractive as possible for foreign sources of finance and capital to operate within the country and to remain there in preference to other DCs competing for the same investment flows. 'External responsiveness' signifies great flexibility on the part of the country in being able to adapt its industrial structure and labour force rapidly to meet changes in external demand, as well as to recognise shifts in comparative

advantage, as new DC competitors enter international markets with the same assets of cheap labour. A constant struggle ensues to develop new skills and raise productivity levels. The competitive model leaves little scope for co-operation with other developing countries, although political co-operation with IC markets may be important in reducing protectionist sentiments. A military client relationship is also likely to be useful.

122. (ii) The role of the state is to facilitate industrial investments and marketing by private entrepreneurs. As the latter make their decisions in response to international market signals, very little central planning is required - purely 'indicative' plans may help in co-ordinating long-term investment plans in different industrial branches. A prime advantage of this style is assumed to be the absence of bureaucratic or licensing controls, negligible taxation on profits, or controls on their repatriation by foreign enterprises. The state merely oversees the smooth functioning of domestic markets and competitive conditions. The two major functions of the state are to provide the requisite physical infrastructure for industry (transport, communications, ports, public utilities) and a highly trained, mobile and disciplined labour force that can keep its wage demands as low as possible. Stable political conditions, good labour relations and consistent government support for private enterprise also require a minimum level of social welfare affordable out of low taxes. The state may be expected to shoulder part of the risks associated with this industrial style, bearing some of the costs (particularly training) of switching or transiting from one product line or industrial branch to another - to maintain a high degree of external responsiveness. Domestic entrepreneurs are expected to be given the same opportunities as foreign investors, and this may require the provision of aids by the state in the form of information on commodity and capital markets, foreign technology sources and trends in foreign consumer behaviour, tastes, etc. To counter the intrinsic advantages of TNCs in obtaining credit from domestic capital markets and in product promotion and marketing, the state may offer insurance to local businessmen and assist in organising marketing efforts in other countries. Finally, the role of the state in style A may be substantial in other sectors of the economy in order to support the industrial effort: particularly in agriculture, the state would need to make sure that the supply of food and raw materials for industrial transformation is kept flowing and that the terms of trade between agriculture and industry generally favour the latter; however, growth in rural incomes would also help to absorb that part of industrial production not taken by external markets, and above all provide an important source of savings and surplus for industrial investment.

123. (iii) Features of the national economy that would successfully sustain style A have to do primarily with the efficient functioning of competitive markets: developed capitalist relations with a thriving private sector depend above all on the existence of a dynamic group of private entrepreneurs who have a high propensity to save and invest in industry and to take risks in long-term ventures, rather than indulge in profligate consumption, commercial speculation, land purchase or the expatriation of profits. Not only do they have to be good managers but also marketing specialists able to develop key

contacts in foreign countries, maintain an excellent information system, and aggressively seek and exploit market advantages wherever they arise. The economy itself, functioning with well-developed overhead facilities, needs to be highly monetised with extensive exchange relations throughout (rather than a large subsistence sector) and high internal mobility of factors, for which an educated and well-trained labour force is essential. A widespread distribution of banking and savings institutions, together with exchange control facilities with the ability to 'fine tune' to rapid changes in international monetary conditions, are also important for the mobilisation of resources and the promotion of exports. Since atomistic competition rather than oligopoly needs to prevail in the domestic market, information, credit, technological or other barriers to market entry (and exit) have to be removed. Industrial and commercial entrepreneurs should dominate the economy together with commercial farmers rather than a conservative landlord class extracting rents from a highly stratified rural economy, which would inhibit the accumulation and extraction of agricultural surplus. Consequently, the distribution of land needs to be equitable and favour the development of medium and small farmers.

124. (iv) Successfully pursued style A industrialisation is likely to produce an industrial pattern that reflects the nature of external demand. Given the emerging international division of labour where DCs produce labour-intensive manufactures for export, production is likely to be concentrated in consumer goods such as textiles, clothing, leather goods and furniture. To the extent that the country has been able to attract TNCs, industries are likely to produce components for an internationally integrated manufacturing structure (e.g. household appliances, automobiles consumer electronics, communications systems) or engage in the final assembly stages of goods to be re-imported into the home countries of TNCs. Particularly for small countries following this style, specialisation in a few articles for export is likely to take place, which may have little or no connection with domestic market demand. This is marked in cases where Export Processing Zones (EPZs) have been established, or off-shore plants by foreign firms (sometimes known as runaway shops) from which manufactured goods are re-exported back to the ICs (taking advantage of Off-shore Assembly Provisions in the tariff regulations of ICs. For instance, in 1975, 70% of all imports of electronic components into the US entered the country under tariff schedule items 806.30 and 807.00; electronic products alone accounted for nearly 15% of all items entering the US under those schedules in that year.) In the decade 1966-75, the value of off-shore production increased by a factor of 10 while the value of electronics sales within the US only doubled. Foreign employment in electronics by US-based TNCs alone are estimated at about 500,000 at the present time. In the case of EPZs, the DC concerned designates a specifically delimited area of its territory for 100% export-destined industrial activity. The zone usually takes the form of a self-contained industrial estate located close to a seaport and/or airport, with its own services of water, power, banking, customs, etc. A package of incentives is provided to the participating enterprises, "consisting of zero duty on imported capital equipment and raw and intermediate products, exemption from excise duties, a 'holiday' on corporate taxes, including taxes on dividends, no restrictions of any kind on repatriation of profits by

companies operating in the zone, etc. These incentives are normally formulated with the foreign company, and particularly the TNC, in mind, although technically they are available to domestic entrepreneurs as well, even if not always to the same extent."^{1/}

125. Sub-contracting to local firms is frequently employed, as indicated by the following remarks on the electronics industry. "Electronics, particularly the semi-conductor industry, is an international industry par excellence. There are a number of reasons for this. Most critically, electronics manufacturing is easily divisible into high-technology work (development, design, engineering, testing) and labour-intensive work (assembly). Geographic separation of the two aspects of production is quite simple. Secondly, the industry produces components which have a very high value in relation to their weight and which can therefore be shipped (or air freighted) easily and cheaply. Thirdly, since components are an intermediary product, they can often escape high tariffs. This is particularly the case with electronic components. Fourth, electronics does not operate under a seasonal rush, and off-shore plants do not have to remain close to distribution or retail centres. And, finally, since US electronics firms hold decisive technological advantages in many areas of component production, electronics is a major export industry. By producing abroad, US firms can situate themselves close to potential or actual retail markets. In all, electronics is, in the words of one observer, an 'industry on the wing'."^{2/}

126. This type of DC specialisation encourages the proliferation of small-scale, labour-intensive units that can be dispersed in their location, but are usually situated close to larger factories to which they are linked as sub-contractors. However, the potential for deepening industrial structure is limited for a number of reasons: small market size does not allow the scale of production required for capital goods; near-total reliance on imported technologies and foreign investors leaves the country with very little capacity to design or construct integrated machine systems; poor linkages between industrial branches do not provide the range of inputs required from within the country. As a result of increasing competition from lower-income DCs that still have the advantage of large supplies of very low-wage labour, style A countries that have reached the limits of exporting traditional manufactured goods such as textiles and apparel have to shift resources into more highly skilled industries. For instance, a recent study indicates that "In Hong Kong, where population and physical resources are most severely limited, both government and private sector economists expect to see the shift primarily in terms of upgrading job skills. They anticipate production of more sophisticated, though not more capital intensive, products, such as watches, cameras and their fabricated parts, in

^{1/} "Electronics in Developing Countries: Issues in Transfer and Development of Technology", UNCTAD TD/B/C.6/34, 12 October 1978.

^{2/} NACLA, "A Run for their Money", April 1977.

which Hong Kong already has a substantial start... More sophisticated electronic products, such as integrated circuit production and medical electronics, are likely to take over as the transistor radio assembly-type operations move on to lower-wage developing countries. Quality jewellery and optics should also expand as workers' skills are upgraded. As Hong Kong's exports diversify, business will aim at more specialised markets. There may be some shift from producing final consumer products. An example of this would be auto-ignition sets and auto-tool kits."^{1/}

127. (v) The impact of style A industrialisation on development is likely to be mixed. If successful, the competitive efficiency engendered by open trading policies should produce high growth rates of manufactured output, income and employment as long as the world economy is buoyant and the external demand for manufactures remains high. Countries such as Hong Kong, Singapore, Ivory Coast, Puerto Rico and, at the limit, Taiwan (which shares some of the characteristics of style B) bear witness to admirable performances according to these indicators. On the balance of payments side, it is not clear whether this style always has positive effects, with only Hong Kong having consistently shown a net gain in the balance of trade for manufactures in the past.

128. Other indicators, however, give rise to misgivings about the long-term effects of this style. The first of these is the very element that style A exploits as its comparative advantage - the low cost of labour. Given the limited technological development or capacity of these countries, they mostly engage in industries at the late stages of the product cycle, where technologies have become widely diffused and where, consequently, monopoly rents are impossible to extract: cost-cutting and price advantages become the main weapons in the competitive struggle. (On average, the ILO estimated that in 1974 workers in ICs earned 3 1/2 times the wage of workers in DCs for about 20 per cent fewer hours, but labour-cost differentials for assembly work may be as much as 1000 per cent between the highest-income ICs and some Asian DCs. A Swede in the garment and footwear industries in that year was earning 23 times what his South Korean counterpart received on average, for a 30.9 hour week against a 54.6 hour week!) The pressure to keep wages low is very strong, particularly against competition from the lowest-income DCs where wages are practically at the subsistence level: this leads to very tight controls being exercised over labour and sometimes to open repression. At the same time, since profit incentives for private entrepreneurs have to be maintained at high levels, the brunt of the social sacrifice imposed by this style falls on the least-advantaged section of society, and income inequalities are likely to become very marked over the long term.

129. Another factor is the limited development of skills (aggravated by the "shallowness" of the industrialisation effort). The TWC practice of relocating bits of the industrial process in different countries tends to enhance this characteristic, as is borne out by a study of the clothing industry: "The process of reducing the skill of the vast majority of the labour force that is required in garment manufacturing has made it possible,

^{1/} S.B. Watkins and J.R. Kailik, *Anticipating Disruptive Imports, New International Realities*, Washington, Summer 1978.

generally speaking, to train operators in very disparate locations to do the same operation fairly quickly."^{1/} The UNCTAD study on electronics provides the following related conclusions on the experience of the EPZs over the past ten years: "The role these EPZs have played in the industrialisation and socio-economic development of the developing countries in which they are located has been and continues to be a matter of debate. On the one hand, it is argued that such 'export processing' operations by foreign companies, mostly TNCs, create employment for semi-skilled and some skilled personnel and boost exports, increase net foreign exchange earnings and lead to 'technological fallout on spin-off' into the domestic industry, thereby serving as a vehicle for transfer of technology from developed to developing countries. On the other hand, it is pointed out that the investing TNCs are interested essentially in taking advantage of the relatively low labour, land and rental costs which prevail in the zones and the direct and indirect subsidies provided by the 'host' developing country in which the EPZ is located; that the social costs of the zones are high and that the foreign exchange earnings must, therefore, be corrected for those costs; that given the low labour cost-oriented interest of the operating TNCs, they so design the nature and scope of their industrial activities in the zone as to concentrate only on the most labour-intensive stages of production so that hardly any 'technological spin-off' is likely to occur; that the range of say electronic products which get taken up in an EPZ at any point in time is so diverse, e.g. Large-Scale Integrated circuits and Light Emitting Diodes (LED) on the one hand and tape recorders and hi-fi sets on the other, that whatever 'technological fall-out' does occur cannot be capitalised on by the domestic industry because of the large industrial gaps between those products (e.g. LEDs are used in electronic calculators, watches, test and measuring equipment but not in tape recorders or hi-fi sets); that the zone leads to a total dependence of the companies operating there on foreign market conditions - sometimes single markets at that - without the cushioning effects of a local market; that, as a result, at times of recession in the developed countries, this can lead to significant retrenchment of labour, with all its adverse social and economic effects to the persons involved and to the economy; that the existence of these zones imposes opportunity costs on exports - perhaps with higher local value added - from the domestic tariff area often by local companies of the developing country, or at least joint ventures; that the danger of exploitative labour practices being followed by the foreign companies in the zone is a real one; and that even with a strong cordon sanitaire around it, the products made in the zone are likely to be smuggled into the domestic economy, particularly because of the price differentials involved and their ready availability, and that this will result in a climate favouring such economic malpractices. ... Overall, as the 1970s come to a close and with the growing trend towards protectionism in developed market-economy countries, there are grave misgivings as to whether EPZs can any longer be regarded as durable structures which can make lasting contributions to the net export earnings of developing countries; or serve as vehicles for the transfer of technology by TNCs to developing countries, even in industries like electronics, to which the zones seemed especially well suited at the start of the decade."^{2/}

^{1/} J.C. Grech, *Threads of Dependence*, Malta, 1978.

^{2/} UNCTAD, *op.cit.*, pp. 34-35.

130. In general, style A is based on an international division of labour which brings with it a decomposing of the production process into a large number of partial and elementary operations performed worldwide at different production locations. In turn, this worldwide fragmentation is reflected in a fractioning of the domestic DC economy with segments related to decisions and economic processes outside rather than within the country: there is very little internal coherence possible for the host country. Several development consequences emerge from the nature of this kind of DC incorporation into the global economy:

(a) Evidently, on a scale of national self-reliance, style A is the most dependent of the three alternatives, with the least national control over the economy's growth path and pattern. Apart from the psychological impact of uncertainty which is treated in the analysis below as a risk, the terms and conditions of the incorporation are dictated by external actors and international markets. "A structurally dependent industry produces structurally uneven development - uneven regional, uneven sectoral and uneven social development."^{1/}

(b) The final consumer goods produced under this style are not directly related to the needs and desires of the local population, but reflect the tastes and life-styles of foreign consumers - usually enjoying much higher incomes. Together with the greater influence of the sales promotional and marketing activities of the TNCs, the result may be not only a de-nationalisation of the industrial economy, but also a gradual disintegration of indigenous culture and traditions, leading to an overall loss of national identity and consciousness. The feature of having privileged "alien zones" on national territory may also not prove palatable in the long run.

(c) The reactive posture inherent in this style, although requiring considerable ingenuity, is likely to inhibit local creativity and innovative abilities for technological change in products and processes: should the country wish to move out of this style at a future date, it may find that it no longer has the option available to it, not having nurtured the necessary skills and institutions over time.

131. (vi) The greatest risks under this style are the risks of failure. Essentially, the countries involved have to sell their labour efficiency to outsiders and outcompete a host of upcoming rivals from other low-wage DCs.

There is no cushion of a large or protected domestic market to fall back on if internal policies fail to successfully penetrate the markets of foreign countries. The sacrifices that national society is being asked to bear under this style are many: strict discipline over consumption levels and wage demands, tolerance of high and growing

^{1/} See F. Fröbel, J. Heinrichs and O. Kreye, *The New International Division of Labour: Structural Unemployment in Industrialised Countries and Industrialisation in Developing Countries*, (English translation of German), Hamburg, Rowohlt Taschenbuch Verlag, 1977.

inequality of incomes, insecurity and instability of workplaces and conditions, lack of national control and internal economic coherence. The compensation or rewards for these sacrifices consist in the promise of high rates of growth of national income and high employment levels, if the countries are successful. The necessary conditions for success listed under (iii) above are very stringent, however, and few DCs have been able to match them fully. Above all, the essential prerequisite of a dynamic entrepreneurial class cannot be found easily or established overnight: without going to extremes of ethnic determinism, there is ample evidence in the "success stories" to suggest that the desirable qualities of high savings and investment propensities, risk-taking and business acumen on the one hand, and high labour discipline and willingness to work exceptionally long hours efficiently, on the other, are embedded in particular cultures and societies that have developed over centuries - aside from the importance of setting the "right" economic policies and price signals. If the proper mix is not found and style A fails to generate the necessary responses in the country's entrepreneurs and workers, the level of political repression required to control the society under conditions of stagnant growth and export earnings would soon prove intolerable.

132. These risk factors are magnified many times over by the nature of external risks. Since the external actors are mainly TNCs seeking to maximise global profits in a restless search for newly profitable opportunities, any particular host country's attractiveness may change in response to global market conditions and the change in comparative advantage among DC locations. "A slump in the US electronics industry (such as those which occurred in 1969-71 and 1974-75) can produce the wholesale dismissal of up to half the labour force almost overnight. When industry purchases of semiconductor devices declined in 1974, electronic assembly plants in Mexico responded by firing 20,000 workers in one five-months period."^{1/} Technological advances are also likely to alter the comparative advantage of particular DCs or even to shift the balance in favour of IC locations, as specialised skills, the close association with research facilities and large domestic commodity and capital markets, and the growth of "service industries" become more important to new product and process developments. In addition to the footloose character of DFI, style A countries are constantly threatened by the fear of protective measures by other countries against their manufactured exports,^{2/} particularly when there is a decline in the growth fortunes of their customers. The problem is compounded by the fact that more and more DCs are attracted to export-oriented industrialisation in a period of buoyant world trade and economic growth, thereby not only setting off a chain of new investments and export capacities which will compete with each other, but which may, together, exceed the total share of the world market available to them at any given moment. Although the present DC share of world exports of manufactures is very small (about 7 per cent) and their share in IC consumption of manufactured goods is usually much smaller still (2 per cent average, while even for the category of textiles and clothing it is less than 10 per

^{1/} NACLA, op.cit., p. 15.

^{2/} For a review of the "new protectionism" measures in the ICs, see B. Balassa, The New Protectionism and the International Economy, Journal of World Trade Law, Vol. 12, September/October 1978.

cent), this does not mean that it will be politically easy to enlarge the share unless structural shifts in IC economies take place more rapidly than in the past, in a general context of high economic growth. The exceptionally rapid rates of growth of manufactured exports from successful style A countries (e.g. Singapore, Hong Kong, Taiwan) of 35-60 per cent per annum are not likely to be maintained; nor can very large countries duplicate this performance without provoking a reaction of new barriers from ICs.

133. Some of the problems and internal contradictions are illustrated by the difficulties faced by Taiwan, which is favoured by its size in being able, potentially, to switch to a less "responsive" style. "Although the pace of industrialisation in the next decade may be slower than that achieved in 1964-73, industrial growth will surely continue. Whether future development will proceed smoothly depends largely on Taiwan's ability to adapt to external changes and to remain competitive. One basic current threat to the island's competitiveness is the developing bottleneck in its infrastructure... Because a cost increase of even a few per cent could force many Taiwanese goods out of world competition, the infrastructure bottleneck poses a major threat to Taiwan's prosperity. The Government has taken steps to alleviate the worst problems ... However, with infrastructure receiving an increasing share of its investments, Taiwan's incremental output/capital ratio will undoubtedly decline in the future. The basis of Taiwan's export boom has been the competitiveness of its labour-intensive industries. Given its relatively abundant labour supply, and with the real wage rising at rates slower than labour productivity, the island's comparative advantage in labour-intensive goods should run into the next decade. Ultimately, its export strength will depend on its ability to export substitute. As unskilled and semi-skilled labour become relatively cheaper elsewhere, Taiwan's export growth can continue only if it can successfully and economically shift its production to industries that are more technologically sophisticated (skill-intensive) and perhaps also more capital-intensive. In adjusting to market changes, Taiwan is already finding skilled workers in short supply ... With the economy becoming more technologically oriented, it would also help if the migration of some of the country's best manpower to the developed nations could be reduced, if not halted. From 1956 to 1973 more than 32,000 college graduates have gone abroad, but only 3,000 have returned. Nearly 60 per cent of those leaving are trained in engineering and science, precisely the skills that are now in demand in Taiwan. Because those leaving are among the top 15-20 per cent of each year's graduating classes, the exodus is more injurious than the mere number might suggest... Although Taiwan's relatively low standard of living is a major reason that so many Chinese students have remained abroad; lack of political freedom and limited opportunity for quick advancement in a society that still clings to traditional and particularistic social values are also contributory factors."^{1/}

^{1/} S.P.S. Ho, *Economic Development of Taiwan 1860-1970*, New Haven, Yale University Press, 1978, pp. 257-259.

134. The nature of these risks highlighted for style A industrialisation indicates the potential role for national and international policies to counteract them. At the national level, actions on three fronts may be contemplated: the first is to negotiate with foreign investors in order to arrive at long-term agreements that will ensure the durability and stable conditions of their investments in the country i.e. to limit the "footloose" character of foreign investment and to maintain high domestic employment levels in foreign-controlled enterprises. The second is to strengthen political ties with major IC governments that represent crucial markets for industrial exports, and which have a patron status in terms of providing a military umbrella or otherwise obviate the need for the DC in question to indulge in heavy military expenditures out of national budgets (with its concomitant impact on the domestic industrial structure by altering it in favour of technology- and capital-intensive heavy industry and direct state investments). The third area is that of providing support to domestic entrepreneurs to compete successfully with foreign TNCs in local and international capital and commodity markets. The inherent advantages enjoyed by well-established international corporations with high credit ratings, broad access to information, and an elaborate distribution and marketing network, make it difficult for domestic entrepreneurs to break into the market, particularly where the host government is actively involved in providing fiscal incentives of all kinds to attract foreign enterprises to the country in preference to other DC locations. Consequently, it would be legitimate for the government to provide initial credit preferences to domestic entrepreneurs, information on foreign sources of capital and technology, and export promotion assistance through state marketing agencies.

135. The basically competitive model followed by style A argues against the possibilities of co-operative action among several countries pursuing the same approach. International co-operation is more likely to be of a bilateral nature between particular IC and DC partners based on strategic interests, or through international sources that can render assistance to individual DCs, rather than joint action between DC governments. The largest role for international co-operation may be envisaged in the case of those DCs that are interested in pursuing style A industrialisation but whose present industrial structure is rudimentary, and where major investments in physical infrastructure and overhead facilities, training in skills, and in the establishment of administrative, monetary and fiscal institutions, have yet to be undertaken. Grants, concessional finance and technical co-operation all would be important to such countries. Assistance in setting up export processing zones and facilities for foreign investors, including the organisation of bilateral consultations between IC and DC enterprises and governments, and information on investment sources, terms and conditions, could also be significant in this context. For a broader spectrum of style A countries, mechanisms that would provide improved information on private capital markets abroad, particularly the availability of risk capital, industrial and trade credit, would be useful. Similarly, they would welcome a system of supplying advance information on technological changes in various industrial branches, particularly those generated in ICs, that are likely to affect their future comparative advantage in international trade in manufactures. Such an early-warning system would enable individual enterprises to plan for shifts in investments between product lines, as well as encourage their governments to provide timely support through retraining schemes and appropriate changes in infrastructure.

4.4 Industrialisation Style B (National Goal-Focused)

136. (i) In contrast to the open-door characteristics of Style A, the attitude towards links with the international system is one of selectivity exercised by the state. The nature of these links is determined by the extent to which the country is able to impose its national objectives on its relationships with other national and transnational actors. In a world conceived as one of oligopolistic rivalry, the state plays a central role in trying to influence the international rules of the game in its favour, either singly or in co-operation with other states whose interests may match its own in particular areas of industrial activity. It is no longer a passive, reactive role responding to decisions taken outside the country but one which actively seeks to mould the shape of international transactions to reflect nationally perceived and articulated goals.

137. Style B, however, represents a much wider spectrum of developing countries, where it is the particular combination of size and development level, geopolitical position, ideological hue, policy objectives, public-private sector interaction, and the degree of state or private capitalism, that is likely to determine the precise stance of the country in question towards the international system. Per capita incomes are likely to span across from the low-income end of the DC range to middle and upper-middle income categories (i.e. from \$ 100 to over \$ 1000). The importance of agriculture, particularly subsistence-based peasant agriculture, in the national economic structure is also likely to vary substantially among Style B countries, and consequently to determine the range of industrial-policy choices available to the country.

138. As a result of all these differences, there will be major variations from country to country in the extent of TNC influence in the relative use made of foreign commercial or concessional finance; and in the emphasis on export promotion or import substitution in industrial policy formulation. Nevertheless, Style B countries are likely to be the most active and discriminating group of developing countries involved in various schemes of international industrial co-operation, and may be singled out as the prime movers within the Group of 77 in formulating demands and pressing for implementation of the Plan of Action for the New International Economic Order.

139. The same interest in international structural reform is manifested in the wide range of actors with whom these countries are presently engaged in making use of international resource flows for industrialisation. With relatively little regard for ideological niceties, co-operation with the CPE countries of the "East" is conducted simultaneously with co-operation with the DMEs of the "North": the two "source" groups in fact may be seen frequently to compete for agreements with those style B countries that have already entered into the more privileged group of the NICs (the Newly Industrialised Countries), and even to encourage association with their own geopolitical blocs. The use of these DCs as intermediaries, constituting regional power centres, figures more and more prominently in the power relations between industrialised and developing countries.^{1/}

1/ See R. Väyrynen, op.cit.

Style B countries are also likely to participate actively in relations with other developing countries, whether bilaterally, in the framework of regional integration movements, or through wider associations of Third World interests. The kinds of activities envisaged by international institutions promoting South/South co-operation through Economic Co-operation among Developing Countries (ECDC) and Technical Co-operation among Developing Countries (TCDC) rely on a leading role for style B countries.

140. Intercourse with such a large range of sources gives rise to an equally rich variety of forms under which co-operation can take place: intergovernmental framework agreements between governments for bilateral flows, co-operation between public sector corporations, training schemes and research co-operation between government departments and national institutions, joint ventures between private enterprises, and collaboration within economic integration schemes, are all examples of co-operative mechanisms made use of under style B industrialisation. The important factor is that each of these channels must retain sufficient flexibility for national goals to find adequate expression: where the supra-national character of multinational schemes becomes dominant, co-operation tends to break down.

141. (ii) The principal distinguishing characteristic of Style B countries is the central role of the state in articulating, defending and projecting national objectives. The status and power of the nation-state as an entity rather than the material welfare of individuals is the major concern that guides the path and pattern of industrialisation. This in turn tends to underline the importance given to a large degree of national self-sufficiency in meeting basic consumption needs, autonomy in national defence and a certain capacity to use military means to advance policy objectives, the potential for carving out a sphere of influence at least within the same geographical region and the sense of a historic "mission" in furthering the "destiny" of the country. Attempts are made in order that ordinary citizens also share the perspective of nationalism and nationalistic goals as consumption goods, the need for whose satisfaction may compete with other, basically material goods obtainable through an increase in the gross national product.

142. In consequence, the nature of the state becomes the crucial variable. Most Style B countries share the features of mixed economics, where private and state capital vie with each other, or collaborate and reinforce each other, in order to shape government policies and appropriate growth benefits. The part played by the military in influencing this interaction is frequently vital to the final outcome. Since it is assumed by definition that Style B countries do not encourage a radical restructuring of socio-economic structures within the country, it is the composition of the broad, decision-making polity or the "ruling coalition of owning classes" that determines the pattern of growth. Land-owners, businessmen, and industrialists, together with the upper crusts of the bureaucracy and the military, constitute the alliance of property-owning classes that provide the coherence, or otherwise, of the industrial style. For instance, in the case of South Korea, coherence has been marked via the emergence of the successful "entrepreneurial state".^{1/}

^{1/} J. Ashdown, South Korea: The Entrepreneurial State, Economic and Political Weekly, Bombay, 17 March 1979.

"The tactics required tight central direction - an entrepreneurial state, knocking everyone into one line. The planners instruct business on targets, type of output, markets, type and rate of expansion of capacity, and invest in inspecting the quality of output. Private companies are in effect subsidiaries of Korea Inc. Most companies depend very heavily on borrowing from the banks, and the government is the major shareholder in all the leading banks. The targets are thus "indicative" only in the loosest sense. President Park meets the dozen or so Zaibatsu of Korea, heads of the government-designated 'General Trading Companies' (and particularly the Big Three: Hyundai, Daewoo, Samsung) once a month to plan the next battles in the conquest of world markets. By a mixture of bribery and bullying, the army advances." In contrast, the absence of coherence has been just as evident in the contradictions to which the ruling coalition has been subject in the case of India, indicated by an observation made in 1958:^{1/} "This breadth of the national coalition which accounted for the enormous strength of the Congress Party in the days of its struggle for national independence at present nearly paralyses the administration that it supports. Although still enjoying the approval of the overwhelming majority of the articulate part of the nation, it encounters insurmountable difficulties in attempting to formulate and to carry out a programme of economic and social regeneration. Setting out to promote the development of industrial capitalism, it does not dare to offend the landed interests. Seeking to mitigate the most outrageous inequalities of incomes, it refrains from interfering with the merchants and money-lenders. Looking for an improvement of the wretched position of labour, it is afraid to antagonise business. Anti-imperialist by background, it is courting favours from foreign capital. Espousing the principle of private property, it promises the nation a socialist pattern of society... Anxious to reconcile irreconcilable needs, to compose radical differences, to find compromises where decisions are inevitable, losing much valuable time and energy in bridging recurrent conflicts within its own fold, this government substitutes minor reforms for radical changes, revolutionary words for revolutionary deeds, and thus endangers not only the very possibility of realising its hopes and aspirations but even the very tenure in office. Handicapped by the heterogeneity and brittleness of its social foundations and by the ideological limitations resulting therefrom, the essentially pettybourgeois regime is incapable of providing genuine leadership in the battle for industrialisation."

143. In addition to defining the broad directions of industrial growth under style B, the state usually intervenes in undertaking industrial investments, either directly through public sector corporations or indirectly through financial institutions. This function is necessitated by the sheer size of investments required for heavy industry which fall outside the scope of private capitalists generating their own resources. Similarly, in order to ensure an industrial pattern that reflects a unified "vision" of national goals, style B invariably requires that the state shoulder responsibility for central planning and control over industrial activity. Depending on the nature of the state, its role in implementing such plans will be widely divergent, ranging from loose/indicative to dirigiste, relying heavily on central controls through public allocations, licensing etc. Controls

^{1/} P.A. Baran, Political Economy of Growth, Indian Edition 1958, pp. 263-264.

are also necessary to the aim of making sure that the links with the international economy are conducive to the attainment of national objectives. Many of the resource flows from abroad will be channelled through government-controlled institutions or vetting procedures, whether these are loans from multilateral bodies and Eurocurrency markets, technologies acquired from TNCs, or trade in manufactured goods. The entire paraphernalia of government controls including tariffs, import quotas, export taxes and subsidies, and exchange rate valuations, are likely to be combined with an active role in the screening of technology agreements, attempts to limit restrictive business practices by TNCs, control over profit remittances, insurance against risk and the obtaining of performance guarantees for foreign investments, training clauses and the indigenisation of skilled and managerial personnel, etc. The extent to which such controls are exercised will depend to a large extent on the commercial regime followed by the Style B country in question: the relative thrust on export promotion and liberal trading policies, or on import substitution and the protection of domestic enterprises against foreign competition. This in turn may reflect the particular phase of industrialisation in which the country finds itself rather than a permanent characteristic of its industrial style. It will also depend on the seriousness and aggressiveness with which the government is trying to make the country self-reliant in its capacities for further industrialisation, particularly in the technological arena. The more it emphasises the ability to replicate and generate technologies locally, or to obtain financial and investment resources out of domestic savings and reinvestment, the more it is likely to rely on a complex range of measures to provide both incentives and directives to industrial entrepreneurs, domestic and foreign. It is of course conceivable that the policies followed in different industrial branches will vary considerably, according to the role envisaged for each in the overall industrial pattern. In general, however, the state under style B may be expected to adopt the position of an aggressive bargainer in its relations with foreign sources of industrial finance, investment and technology, intent on obtaining the best possible terms and on transferring capacities as soon as possible to actors within the country under national control.

144. (iii) The preconditions for successful Style B industrialisation are considerably more demanding than for Style A. Here one is considering countries that aspire to full-scale industrial status, imitating not only the methods but also the comprehensive pattern of industrialisation realised by the present-day ICs. As was pointed out earlier, a number of exogenously given factors need to be united in the first instance: the country must be of sufficient size and market power, and possess a large enough natural resource base to be able to sustain a full range of industries that can direct a significant proportion of their output to domestic consumption, and retain some degree of independence from the vagaries of external demand. Many of the Style B countries fall within the range of densely-populated, agrarian-based economies, where the investible surplus for industry has to be extracted from agricultural production. Consequently, the relations of power within the country have to permit resource transfers on a large scale from the countryside to the towns where most industry is located.

145. Other preconditions relate to the infrastructural and skill requirements of industrialisation on a large scale. An efficient transportation and power system, mineral exploration and exploitation and good communications over large land areas, have to be combined with a complex bureaucracy able to provide consistent direction and administration through a large range of government measures and controls, and to run state enterprises in industry. The formulation and implementation of central plans requires skills in sectoral programming, manipulating macro-economic controls as well as detailed enterprise management. In order to develop a technological capacity equal to the task of efficiently assimilating imported technologies, modifying processes and innovating in the generation of new products and processes, the educational system has to produce scientists and engineers in a very wide range of specialisations who are as familiar with shop-floor processes as with laboratory-based research and development. Both administrators and scientists have to be able to work together as negotiating terms versed in protracted bargaining with foreign suppliers of technology, in unbundling and unpackaging and in successfully transferring industrial capacities to the host country. Finally, the social tensions and pressures that result from the accelerated industrialisation mode characteristic of Style B make heavy demands on an efficient system of maintaining "law and order" and channelling popular energies into narrowly-directed national goals.

146. (iv) Overall, this style is distinguished by the depth and comprehensive spread of industrial structures, directed towards the building up of a mature industrial economy able to compete on equal terms with the ICs in world markets. It is not only a question of being at the technological "frontier" in particular branches whose products are destined for export; it also involves a properly integrated structure in the input-output sense, with a well-covered web of horizontal and vertical linkages. Thus, Style B requires the existence of significant capital goods production and high levels of technological sophistication, to give countries the ability to initiate industrial activities on their own, to innovate in both products and processes, and to engage in technological exports. Finally, armaments production is likely to figure prominently in the industrial structure. In general, the importance of heavy industry tends to make the entire complex capital-intensive, particularly through the predominance of machinery, transport equipment, electrical and communications equipment and metallurgical products.

147. Even in the case of a Style B country such as Brazil, which has been considered a prime example of capitalist industrialisation in a developing country, the role of state-owned enterprises has been of the greatest importance. A 1970 study showed that 16 of the country's 20 largest firms were run by the state, which owned 86 per cent of the total assets involved, including the biggest steel producer, Companhia Siderurgica Nacional, the oil monopoly Petrobras, the electricity generating monopoly Electrobras, the telecommunications group Embratel, and the aircraft manufacturers Embraer. During the boom years 1967-1973, 60 per cent of total investment was undertaken by the state, while the Bank of Brazil has a quarter of all bank deposits, and the government controls 15 commercial and 11 development banks. Through forced and other savings schemes, loans are channelled mostly into industry. As a proportion of GNP, budgetary expenditures rose from 19.4 per

cent in 1949 to 27.7 per cent in 1973. If the state's industrial holdings are added, the proportion could be as high as 50 per cent.^{1/} In the Republic of Korea, about 43 per cent of exports are at the heavy end of industrial production, mostly in basic metals, shipbuilding and petrochemical products. Moving out of traditional lines such as textiles, examples of exports include entire turnkey plants such as a zinc refinery to Thailand, a paper factory to Colombia, a soda ash plant to Peru, a pulp plant to New Zealand. Steel production rose from less than 1 million tons to 6 million tons in 1978; plans for a new plant of 12 million tons were announced in 1978. Shipbuilding has shot up from a 20,000 gross tonne capacity in the 1960s to 700,000 tons in 1976, with plans that would make the country the world's second largest shipbuilder after Japan by 1981. Also by that time, vehicle building capacity is to reach 2.1 million units (with 900,000 exported) from the current level of 220,000 units per year. It has been argued that it is not only the simple pursuit of profit that has driven Korea's industrial growth, and that the perceived requirements of national defence have played at least as important a role. "South Korea has 595,000 men and women under arms (the fifth largest military force in the world, but with only 2.7 million organised in paramilitary forces, backed up by universal conscription. Perhaps more than half the budget in fact (rather than in the published figures) goes to the defence sector, and much more if we include as part of defence the drive to heavy industrialisation to achieve military independence from imports."^{2/}

148. The importance of defence in Style B industrialisation may be associated with the product cycle hypothesis of industrial evolution,^{3/} where four phases of a product's life history are identified: (a) innovation and domestic sales of a product; (b) saturation of the domestic market and export of the product to foreign markets; (c) direct foreign investment, or manufacture of the product within foreign markets; and (d) export of the product from foreign countries into the original home market (where domestic manufacture of the product goes into decline). The consequences of the product cycle on national power and international politics have been examined by Gilpin,^{4/} and explored in a historical analysis for the textile, steel and automobile industries by Firth.^{5/} "In general, the major consequences of the domestic growth of an industry have been for domestic politics, including the nature of political regimes. Conversely, the major consequences of the later phases, those of foreign exports and foreign investments, have been for foreign policies." It is obviously the steel industry that has been most closely identified with the role of the state and of national defence, with railroads, shipbuilding and automobiles as the major final consumers of steel output. Much more than for textiles, the

^{1/} The Economist, Survey of Brazil: Change in Direction, July 31, 1976.

^{2/} J. Ashdown, op.cit., pp. 586-587

^{3/} R. Vernon, Sovereignty at Bay: The Multinational Spread of US Enterprises, New York, Basic Books, 1973.

^{4/} R. Gilpin, US Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment, New York, Basic Books, 1973.

^{5/} J.R. Firth, The Political Consequences of the Product Cycle, Industrial History and Political Outcomes, International Organisation, 33,1, Winter 1979.

need to mobilise large amounts of capital leads to financing by the state and by large investment banks. After the initial railroad-building phase was over for Britain, Germany, France and Italy, and the steel industry faced severe recession, these countries turned to naval shipbuilding, armaments production, and military procurement. The automobile industry, in contrast, is typical of other consumer durable products of industry in requiring substantial purchasing power in the hands of a large middle class. "Since Brazil had and continues to have a much lower per capita GNP than other large automobile producers, the greatly-increased consumption of automobiles in Brazil required a special form of income redistribution, that is, redistribution to the middle class from the lower classes. This has been accomplished through government measures which repressed working-class real wages, reduced welfare and public health programmes, increased middle-class real salaries, and provided government credit for automobile purchases."^{1/} As Brazil's Finance Minister stated in 1974, "A transfer of income from the richest 20 per cent to the poorest 80 per cent probably would increase the demand for food, but diminish the demand for automobiles. The result of a sudden redistribution would be merely to generate inflation in the food-producing sector and excess capacity in the car industry."^{2/}

149. The composition of the industrial structure in Style B is invariably sensitive to the nature of the commercial regime followed: an export-oriented pattern will not only tend to specialise in branches that cater to foreign demand but will be also likely to make greater use of foreign investment in the manufacturing sectors. For instance, about 50 per cent of Korean manufacturing output is exported (and about 90 per cent of all Korean exports are manufactures)^{3/} and the share of foreigners in direct investment is about one third (82 per cent of it American or Japanese), although their share in key export sectors is much larger. Another feature of the export-oriented strategy, even as pursued by an aggressive Style B country, brings it close to the Style A pattern, as the following observation shows: "Korea, from one viewpoint, is no more than an offshore exchange between Japan and the United States. Crudely, Korea imports raw materials (much of them from the US), uses Japanese machinery to work them up, and exports the results to the United States (and now Europe). The results are a large surplus on Korea's trade with the United States, and a giant deficit on trade with Japan. Looked at in another way, Korea's surplus on trade with the US should be included as part of Japan's enormous surplus on its US trade. Korea's exports may be dynamic, but they are matched by the dynamism of its imports from Japan (despite the rise of the Yen); imports from Japan increased 51 per cent in the first half of 1976, compared to the first half of 1977."^{4/}

^{1/} J.R. Firth, op.cit., p. 31.

^{2/} Quoted in N. Gall, *The Rise of Brazil*, Commentary 63, January 1977.

^{3/} *The Economist*, Survey of South Korea: From Rags to Riches, March 3, 1979.

^{4/} J. Ashdown. op.cit.

150. However, all of the successful cases of style B industrialisation have clearly begun with a long period of import substitution industrialisation before moving to export promotion or export substitution. This is as true of South Korea and Brazil as it is of India, usually cited as a country that has "unnecessarily" delayed its transition to the export-oriented phase. It may be seen as an extension of the Linder thesis that domestic demand has to provide the initial stimulus through economies of scale to make exports profitable: "It is a necessary but not a sufficient condition that a product be consumed (or invested) in the home country for this product to be a potential export product."^{1/} The correlation between domestic demand and manufacturing exports has been empirically verified particularly in the case of intermediate and capital goods industries such as machinery and equipment, chemicals, rubber and paper products. As domestic expansion of production takes place, an increase in investment takes place, the age composition of capital changes, there is learning-by-doing, scale economies, qualitative improvements, higher productivity - leading to greater competitiveness in international markets. These observations would appear to give style B some advantages over style A in terms of long-term productivity increases in industrial processes even if the objective is the common one of producing for export.^{2/}

151. (v) The impact of this industrialisation style on national socio-economic development and structures varies to reflect the major differences of conditions and policies among style B countries. The negative results have been noted more frequently than the achievements which tend to be impressive in terms of physical magnitudes, breadth and depth of the industrial structure and technological capacity. It is the single-mindedness with which the industrial goal has been pursued that frequently brings in its train severe inequalities, social and regional imbalances; it is the type of concentration on capital-intensive, heavy industry built up under central direction and state control, often with extensive subsidies and costly protective measures that are at the expense of the rest of the economy, that aggravate problems of unemployment, poverty, and capital scarcity for the economy as a whole. Emphasis on the production of consumer variables for high income earners and weapons systems for the military, signifies that the benefits of industrial growth directly benefit only a small proportion of the population, and the productivity-raising potential of machine-based technology is confined to a small segment of producers in isolated enclaves. In short, the by-now conventional critique of Third World industrialisation in the post-World War II period is directed principally at style B processes and measures. As applied to the import-substitution model, negative impacts were summarised in a 1970 study of seven, major, style-B DCs:

"The studies on the seven countries indicate that these countries have now reached the stage where policies that are followed to promote import substitution are proving to be harmful for the economic development of these countries. Industrialisation sheltered

^{1/} S. Linder, *An Essay on Trade and Transformation*, New York, Wiley 1961, quoted in J. Ahmed, *Domestic Demand and Ability to Export in Developing Economies: Some Preliminary Results*, *World Development*, 1976, Vol. 4., No. 8.

^{2/} J. Ahmed, *op.cit.*

by high levels of protection has led to the creation of high-cost enterprises: these enterprises are producing expensive products many of which are for use by a restricted middle class, and so production is rapidly coming up against the limits of the home market. ... With high industrial prices, maintained behind high tariffs, industrialisation has sometimes been carried out at a high cost to agriculture. The result has been to encourage a drift from the countryside, to accentuate inequality of the distribution of income, and to create serious unemployment in the towns since the country-folk emigrate faster than the new industries can create jobs for them. The increase in costs and over-valuation of the currency have also discouraged exports both agricultural and industrial. The import of raw materials and capital goods has resulted in foreign currency costs as high, and sometimes in excess of, the savings made on the imports of finished goods.... With the policy of industrialisation leading to a drain on foreign exchange, the Governments have often had to ration foreign exchange for imports. Ponderous administrative control has held up decisions and has led to excessive stocks and the creation of a multitude of firms operating below capacity. With the spread of industrialisation the authorities have experienced growing difficulties in making rational decisions on the distribution of import licenses; the principle of handing them out on the basis of existing production capacity has tended to freeze the structure of industry and to multiply fictitious production returns, since a growing number of industrialists has been applying for import licenses in advance and disposing of them on the black market if they cannot use them. Finally, the cumbersome methods of distribution and the difficulties of supervision have encouraged the spread of corruption in some countries. ... The most serious result of these policies, however, is that the nascent industries have come to depend for their profits on government decisions, and so have formed the habit of devoting their efforts to obtaining privileges by pressure on the government rather than by cutting their costs."^{1/}

152. Sharp regional imbalances have been striking in the case of Brazil, where 60 per cent of the population have been attracted to the Southern end of the country on only 18 per cent of the land, and enjoying four-fifths of the national wealth. In South Korea, the combination of investment in heavy industry concentrated in the hands of a few Zaibatsu, together with the austerity demanded by its tremendously forced pace of industrial and economic growth, has led to some of the hardest working conditions in the Third World: an average working week of 57.7 hours that gives the country the world record according to the ILO, low working wages that are cut by inflation rates of nearly 30 per cent per year, high levels of environmental pollution. In India, in spite of a second five year plan, philosophy that had very ambitious objectives of promoting heavy industries for self-reliant development, "the development of the basic producer goods industries has not made much progress after the initial spurt during the decade 1956-65, household enterprises have been unable to expand their production of essential consumer goods rapidly enough, and factory production in consumer goods industries has been rising fastest in the case of non-essentials and luxury goods... Though a core of capital goods industries has been

^{1/} I. Little, T. Scitovsky and M. Scott, *Industry and Trade in Some Developing Countries*, London, GUP, 1970.

built up, part of the capacity so created has tended to remain unutilised for lack of demand. This has particularly affected industries dependent on public investment, since decline in the relative share of the savings of the public sector and of foreign aid has adversely affected the ability of this sector to maintain investment at the required levels. At the same time, there has been considerable expansion of industries catering to the requirements of the high-income groups, and a significant part of the output of the capital goods and other high-priority industries has been absorbed by them. Consequently, several of the linkages that have developed have not only been different from those originally intended but the purposes they now serve have also begun to stand out in sharp contrast. The product pattern of public sector enterprises has also shown tendencies from time to time to get adjusted to the pattern of demand from the higher income groups and the industries catering to them. Thus hot- and cold-rolled sheets required for the manufacture of consumer durables have received considerable attention in some of the steel plants in the public sector despite the high capital intensity of the investment required for the purpose. Stainless steel similarly figures prominently in the proposed product mix of another steel plant on which work was recently started, though demand for it on the scale conceived seems likely to come only for the manufacture of utensils preferred by those in the high-income groups."^{1/}

153. (vi) The principal risks with style B industrialisation are internal, although external risks rise with the increased participation in the international economy of countries at the export-oriented end of the spectrum. Internal risks evidently stem from some of the negative impacts discussed above; crudely, they may be grouped under the heading of social conflict, generated as a result of sharp income and wealth inequalities, growing poverty, deprivation and unemployment, marginalisation of particular geographical regions and occupational groups (such as the landless agricultural labourers), and prolonged political repression. Recent years have witnessed the overthrow of several regimes precisely as a result of the conflict resulting from the pursuit of industry-centred development strategies that have neglected mass requirements for the satisfaction of basic needs. The growth of militarism is another danger that can be associated with style B. It is clear, however, that international co-operation can do very little to mitigate these risks other than provide relief room for manoeuvre in the form of additional resources.

154. International risks that stand out in this style belong to three categories: the first is that of conflict with other countries, both with ICs and with other NICs following a similar path of nationalist industrialisation, since interests are likely to be competitive, with several countries striving for hegemony. The second is that of denationalisation, or the reverse of the main objective sought through this style. In the hunt for foreign technological, financial and marketing resources through DFI, style B countries may subvert their own decision-making, managerial and entrepreneurial capabilities while advancing under the illusion of successfully attaining high MVA growth targets. The third

^{1/} K.N. Raj, Linkages in Industrialisation and Development Strategy: Some Basic Issues, Journal of Development Planning, No. 8, United Nations, 1975.

type of risk is that of straightforward indebtedness, since the pattern of industrialisation normally involves very heavy capital expenditures financed through foreign loans, and continued borrowing to supply maintenance imports of raw materials and intermediate goods. The very large amounts of debt accumulated by Brazil, Mexico and the Republic of Korea over the past decade bear testimony to this statement.

155. Again as indicated earlier, style B offers the greatest opportunities for international industrial co-operative action on all fronts, not least because governments following policies under this style actively seek, in international fora, to change the ground rules of the international economic system in order to facilitate their own entry as industrial powers. They are also likely to emerge as the principal beneficiaries of any reforms achieved within a market system, since their technological capacity, absorptive potential and domestic markets will continue to attract external investment and financial resources, and since they will emerge as major participants in world trading in manufactures. This applies to all the proposals advanced under the umbrella of the NIFO Programme of Action including reform of the world monetary system and institutions; in addition, they also stand to benefit most from various schemes of regional economic integration, improved access to private commercial credit and capital markets, tariff reduction and systems of preferences in trade negotiations, the promotion of Third World multinationals, proposals for combined R + D and the generation of new technologies. The scope for international co-operation for style B countries has increased substantially in recent years because they now encompass countries with large financial surpluses and industrial "appetites" as well as others with large surpluses of skilled manpower and technical skills.

156. In the technological area, for instance, style B countries are likely to be heavily involved in bargaining for better terms and conditions of technology acquisition, either directly with TNCs, or as participants in international negotiations, since they possess the ability to unpackage and unbundle technologies and to effect rapid transfers, as well as the necessary access to information on alternative sources and processes. They are also active technological learners, anxious to improve their capacities through methods that are both formal and informal, shop floor on-the-job as well as laboratory-testing. Reforms in legal and administrative institutions for technology transactions will find a ready echo among style B countries, as will attempts to improve information collection and dissemination on scientific advances and applied research. Even the newly-launched attempts to generate appropriate or intermediate technologies, although they may have been originally designed to attract LDC participation, are likely to be of greatest use to style B countries with the scientific and engineering infrastructure adequate to modify and adapt such technologies to local requirements. As a corollary to these attempts to improve their capacity for producing industrial goods and technologies, this set of countries will be interested in institutions, legal facilities, and financial stimuli that can encourage the marketing of manufactures and technological services to ICs and/or other DCs. In the latter connection, they may be expected to take the lead in the promotion of collective self-reliance through co-operative attempts at TCDC and ECDC.

4.5 Industrialisation Style C (Social-Priorities-Determined)

157. (i) Relations with the international economic system under this style are assumed to be carefully regulated under central direction in order to respond to the needs of the domestic population. International co-operation is seen as a "residual" after internal needs and constraints, and local possibilities for meeting them have been ascertained and tried; even then, external resources must be channeled and husbanded in such a way that their narcotic, habit-forming and stultifying influence may be minimised in both time and space. In other words the catalytic and sectoral role of foreign inputs is taken much more seriously and literally than in the other two styles. Market forces play a much diminished part in forming and fuelling the channels for international flows, and enterprise-to-enterprise collaboration is likely to be relatively rare. This does not mean, however, that style C countries are not interested in taking advantage of international exchange and resource flows, only that the terms should be completely determined by the country in question.

158. As with style B, it is possible for a wide spectrum of Third World countries to follow style C; but in this case, differences are likely to be more in terms of size, resource endowment, industrial structure and economic-sectoral configuration than in political leanings. The fact that it is difficult to point, in practice, to a large list of countries that appear to pursue style C bears mute testimony to the tremendous discipline that this style imposes on the national society, and the consequent difficulties in consistently implementing the policies involved. Variation in the physical, objective constraints mentioned are likely to influence the extent of international intercourse that each style C country will wish to engage in, whether to trade, to import technologies and skills, or to borrow funds. The objectives of style C, however, assist it in being the least dependent of the three styles on external supply and demand conditions, based as it is on using local resources to meet, in the first instance, the primary needs of its people. In the case of relatively large countries, it is quite conceivable to envisage "enclaves" where international resource flows are properly permitted, but only for specific purposes such as the exploitation of mineral and fuel resources, for defence production, or in export promotion areas similar to export processing zones in order to earn foreign exchange essential to the establishment of local industrial capacity (rather than the usual EPZ objective of maximising employment).

159. If the starting point of industrialisation programmes under this style is the drawing up of an inventory of socially-determined needs for industrial goods - in an order of priority that is also socially determined - it is equally important for the country to determine its use of external resources selectively in terms of their likely impact on national society, including its future capacity for self-help and self-determination. The nature of the development path will exert a greater influence on international co-operation under this style, possibly in a relatively more homogeneous fashion than for the other two. The content of primary human needs, as well as the structure of most poor countries, in a situation where the requirements of the majority of the population become the deciding

factor, make it reasonable to assume that the primary task of industry under this style will be to provide inputs for raising agricultural productivity and artisanal efficiency, and supplying consumer goods for peasant families and low-income urban households. The importance of rural location, small industrial unit size, and dispersion of facilities, common to most style C patterns, is another determining factor. Since style C sets a high store by the value of national independence, the establishment of a military capability adequate to ensure self-defence may also influence the shape of industry (although the nature of military objectives, strategy, capability and structure is likely to be quite different from that of style B). The ability to generate technology at home in order to manufacture goods that are needed locally and yet not available internationally, to rely on locally available fuels and raw materials, and the independent value given to broad-based participation in industrial innovation, design and production, give importance to the need for capital goods industries in style C, as well as to the value of establishing local R + D facilities and science training. Together, these will determine in large part the desirable forms of international industrial co-operation.

160. The likely sources of external co-operation are determined by the same factors. TNC involvement in particular enclaves may be substantial, but direct foreign investment with foreign equity ownership is not readily foreseeable. There is likely to be much greater interest in relatively free, South/South, intra-Third World, transactions - particularly with those countries sharing a similar orientation - than with IC countries of the North with which links must be strictly selective and controlled. Given the nature of the state under style C, industrialised countries with a socialist pattern of development (the so-called "East") are likely to be easier to co-operate with than the DMEs, although the technological advantages enjoyed by the latter may outweigh the significance of political differences. The overall external orientation of style C countries may be decided by questions of size and power, by the relative ability of the country to control its relationships with others, viz. the difference between, say, the People's Republic of China and Guinea-Bissau.

161. (ii) Once again, it is the nature of the State that is vital to the objectives and paths of style C industrialisation, but it is a state that is very different in formation and composition from that of style B. Indeed, one can envisage a fairly sharp shift from style B to style C, or vice versa, as a result of a dramatic change in the nature, and subsequent role, of the State. As explained earlier, the crucial distinguishing feature of style C is a national socio-economic structure in which the distribution of productive assets, capital and income, and the corresponding distribution of productive assets, capital and income, and the corresponding distribution of political decision-making power, are equitable and widely dispersed throughout the entire polity of the country. This requires a certain homogeneity and integration of the national society and culture, an absence of sharp divergencies between town and country and the various geographical regions, or between classes and occupational groups and, more positively, the prizing of popular participation in production and decision-making as a major development objective in its own right. There are very few countries that share such initial conditions except

for isolated tribal societies that have negligible industrial capacities and limited potential for the future. Consequently, it is only the result of a genuine social transformation, radical enough to be termed a revolution, that can endow the State and society with the characteristics described. In practice, historical changes of this fundamental nature have been witnessed during the course of long struggles of liberation from dominant and repressive rulers in which there has been mass participation over a protracted period. Learning through struggle has provided the population with education experience in production, a breaking down of traditional barriers of custom and hierarchy, and a stake in the making of political decisions that it will not readily relinquish once power has been institutionalised. Therefore, although the State is likely to carry a strong measure of central authority and to rely on centralised planning for industrialisation, it may be expected that there will be considerable delegation of production decisions to the local level, particularly where production processes themselves are based on co-operative or communal forms of organisation in the countryside.

162. Industrial policies derived from this type of political organisation will emphasise a closely integrated (in the inter-sectoral and locational senses) economy; where much of industry is agro-based in the first instance, with a technological strategy of walking on many legs at the same time for the variety of industrial tasks, with massive worker-training schemes that emphasise informal, on-the-job learning rather than the promotion of specialised education for a narrow technocracy. Local technology generation and local innovation in both products and processes would be of major concern to the government. The role for capital goods production is likely to be a substantial one in order to be able to establish an independent engineering and technological capacity within the country.

163. As with style B, but to an even greater degree, the risks of style C are almost exclusively internal. It is not an easy style to follow as there are few technical precedents, market signals are absent from large areas of the economy, and there are obvious dangers of over-centralisation in decision-making, of arbitrariness in determining "social needs". The stress on using local resources could inhibit growth in the long run (short term in the case of small countries) while the absence of competition and the stimulus of fresh approaches from abroad could also inhibit creativity. A recurrent "cultural revolution" is required.

164. It is easier to conceive of resource flows among style C countries, or even with other developing countries, than of large exchanges with the North (except in order to obtain specific technologies or capital equipment). Intra-Third World trade might be encouraged, particularly with the framework of government-organised schemes ("organised marketing arrangements"). The use of external finance would be limited to very specific, temporary ends, although the credit-rating of such countries may be very high due to political stability and, occasionally, economic strength (e.g. the recent example of transnational banks scrambling for business in China). Export earnings are likely to be the major source of foreign exchange, since the concepts of long-term debts or tied aid in any form are inimical to style C. There would be even less room for DFI, but TNCs might

be encouraged to transfer their technological capacities in unbundled or joint venture form, under strict control. The scope for international co-operation is likely to be considerable in exchanging information on "appropriate" technologies, and in establishing local R + D capabilities. Overall, it is South/South exchanges that offer the greatest potential for style C industrialisation.

CHAPTER 5: COUNTRY CASE STUDIES OF INTERNATIONAL CO-OPERATION IN THE INDUSTRIALISATION
PROCESS - EXTRACTS AND CONCLUSIONS

5.1 Introduction

165. Studies were undertaken of the processes of industrialisation in Trinidad and Tobago,^{1/} Brazil^{2/} and India,^{3/} and their relationship to international resource flows for industrialisation. The objective of the overall Joint Study on International Industrial Co-operation for which the country cases were analysed was one of identifying and elaborating mechanisms of international co-operation that would be of use to the entire spectrum of developing countries. Of necessity, this "global" approach to industrial problems has had to ignore the historical, geographical and cultural realities of the world from which the demand for, and the capacity to undertake, different forms of co-operation has to stem. The attempt to develop a typology of alternative industrialisation styles in the previous section served only to refine the abstraction, rather than to reflect the actual paths traced by the industrial evolution of particular countries. The inclusion of these three studies is an effort to remedy in part this major gap in analysis.

166. Lloyd Best has stated the problem succinctly in the study of Trinidad and Tobago: "A large part of the development problem is the blurring of perception and the loss of nuance perpetuated by the pigeon-holing necessary to the universal perspective. The merit therefore of these country studies is that, as specified, they must sharpen insight by the feel we get of a particular situation. ... The particular situation in Trinidad and Tobago, if it teaches us anything, makes one cardinal point which is that the repeated codification of countries into North-South and South-South, etc., borders on the absurd and constitutes a variation on the theme of impotence which opened with developed and undeveloped countries, passed to First and Third with no Second World but with a Fourth lurking in the shadows, and so on. Meanwhile industrialisation and development strategies simply fall into yellow leaf. If this process of futility is somehow to be turned around, what is most needed is a basis for identifying the processes which are crucial to the continued existence of dependent and non-industrial economy. Such is clearly the aim of the Joint Study and concern behind the current demand for a new international economic order. It is only if we are correct about what those processes are in particular economic systems that we will be in a position to judge each conjuncture and gauge the options for action. ... The point here is that such a preoccupation as the Lima Declaration and the accompanying target - inevitably perhaps - postulates that change is possible everywhere at the identical time. While this is a perfectly valid ideology for an international agency to hold and an inescapable one besides, it is ideology nonetheless. The fact of the matter is that the convergence of forces favours movement in some of the countries only and is not congenial to movement

^{1/} Prepared by Lloyd Best, Director, Trinidad and Tobago Institute of the West Indies, Port of Spain, February 1979.

^{2/} Prepared by Paul Singer, CEBRAP, Sao Paulo, 1979.

^{3/} Prepared by Ajit Mozoomdar, Secretary, Indian Planning Commission, New Delhi, 1979. Study available at the UNIDO Secretariat.

in the rest of the world. It would therefore be a great pity if the ideology of advance on all fronts be urged to a point where the methodology of the Joint Study dealt too widely in common denominators. Sensing this risk, we have sought to achieve one objective only: that is, to identify what might be called the "primary contradiction" in Caribbean economy and to locate it in an action frame and therefore in a historical and highly empirical context. It follows that we should have approached this task in a frankly subjective way in the sense that we have deliberately selected a particular framework of historical interpretation. We started from the premise that the whole task of charting strategy for the future involves a judgement on the meaning of the past; our objectivity has consisted simply in making the historical framework explicit."

167. The three countries selected for study have gone through very different experiences as a result of varying historical circumstances, resource endowments and policy paths; these experiences are therefore specific to the countries concerned, and it would not be correct to generalise lessons drawn from them to the whole range of DCs. Nevertheless, in terms of their evolving relations with external factors, they may be considered "typical" of broad groups of DCs. Brazil and India are both large, diversified economies that have developed substantial industrial structures after a long, sustained investment effort over the past thirty years. Although centralised direction and stimulation of industrial growth have been evident for the two countries, their approaches to international sources of investment funds and capital have been markedly distinct. Trinidad and Tobago falls into the numerically more significant group of developing countries that is small in size and population and a relative newcomer to the industrialising stage, although its income and energy positions are enviably superior to those of most of its peers. Relative to the other two, it represents a more passive attitude towards external sources of finance, investment and technology.

168. The individual case studies stand on their own and two have been included in their entirety in the collected papers of this volume. The analysis in each case lays a different emphasis on the various factors that have determined the country's industrialisation style over the years. A historical perspective is particularly evident for Trinidad and Tobago, the Indian study stresses the role of Government and central planning, and the study of Brazil provides some analysis of the social costs and benefits of industrialisation. It also attempts to situate the Brazilian effort within the wider context of Latin American industrialisation. In contrast, the other two studies provide much more factual and descriptive material on the present industrial structures of the countries concerned, and how they have developed in response to Government policies in recent decades. Rather than attempt a synopsis of each study which would involve a description of the industrialisation process in each country, the following section is concerned with highlighting the role of external co-operation and the recommendations for international co-operative mechanisms that emerge from the analysis. In drawing together the central features of the three country experiences, it should be interesting to relate these to the earlier discussion of national and collective self-reliance, indigenous industrialisation and alternative styles of industrialisation. Thus, although the majority of

references will be to the case studies undertaken for the UNIDO Study^{1/} the analysis may be complemented by information taken from other sources as well.

169. Before embarking on the sections by country, some basic information on their economies and industrial structures (1976) may prove helpful.

	Total population (million)	GNP per capita	Total MVA (million \$)	MVA % of GDP	MF exports as % total exports
Trinidad and Tobago	1.09	2,240	360	14.1	6.2
Brazil	109.96	1,140	33,351	28.8	23.3
India	620.40	150	11,966	16.3	42.2

In the total MVA for all developing countries, Brazil alone accounted (in 1975) for nearly one fifth (19.52 per cent) and India's corresponding share was one tenth (9.80 per cent). As a share of total manufactured exports from developing countries (1973), Brazil represented 8.02 per cent and India 4.62 per cent. The much smaller shares for Trinidad and Tobago may be deduced from the above figures.

170. Statistics on the sectoral breakdown of national income and the subsectoral composition of industrial output are more scanty for Trinidad and Tobago than for the other two countries.

Percentage contributions to GDP for Trinidad and Tobago, selected^{2/} sectors and years, 1951-1974

	<u>1951</u>	<u>1965</u>	<u>1970</u>	<u>1974</u>
Agriculture, Quarrying	18.1	9.0	7.6	3.9
Petroleum, Asphalt, Mining and Refining	30.3	24.1	20.4	41.2
Manufacturing (excluding sugar)	14.1	15.2	17.2	8.2
Construction	2.7	5.0	4.4	5.6

Structure of output of the manufacturing sector, 1966-1972, Trinidad and Tobago (%)

<u>Year</u>	<u>Food and related</u>	<u>Consumer durables</u>	<u>Other manufactured</u>	<u>Total</u>
1966	33.5	35.7	30.8	100
1969	29.8	43.6	26.4	100
1972	27.3	45.8	26.8	100

^{1/} Industry 2000 - New Perspectives, op.cit. For ease of reference, the case studies will be referred to simply as TT, India and Brazil. Other references will be quoted in full.

^{2/} Taken from TT, Appendix C, Table 3a.

171. The following sectoral breakdown for Brazil and India shows much smaller proportions for food, beverage and tobacco industries (ISIC groups 311-314) and a larger percentage in the output of heavy industries (textiles and clothing, however, continue to absorb over one quarter of India's total value added in manufacturing (25.56 per cent)).

Sectoral composition of MVA (ISIC 3), 1970, by major group, Brazil and India^{1/}

<u>ISIC major group</u>	<u>Brazil</u>	<u>India</u>
311-312 Food manufacturing	13.32	8.31
313 Beverage industries	2.27	1.16
314 Tobacco manufactures	1.41	4.27
321 Manufacture of textiles	9.14	21.77
322 Manufacture of wearing apparel, except footwear	1.68	3.79
323 Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	0.63	1.63
324 Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear	1.65	3.61
331 Manufacture of wood and wood and cork products, except furniture	2.53	4.23
332 Manufacture of furniture and fixtures, except primarily of metal	2.05	0.80
341 Manufacture of paper and paper products	2.59	1.28
342 Printing, publishing and allied industries	3.58	2.09
351 Manufacture of industrial chemicals	5.83	4.03
352 Manufacture of other chemical products	4.87	4.68
353 Petroleum refineries	2.01	1.33
354 Manufacture of miscellaneous products of petroleum and coal	2.01	0.10
355 Manufacture of rubber products	1.94	1.41
356 Manufacture of plastic products not elsewhere classified	1.87	0.26
361 Manufacture of pottery, china and earthenware	1.39	0.45
362 Manufacture of glass and glass products	0.94	0.85
369 Manufacture of other non-metallic mineral products	3.61	4.09
371 Iron and steel basic industries	4.01	5.74
372 Non-ferrous metal basic industries	4.01	1.34
381 Manufacture of fabricated metal products, except machinery and equipment	3.35	5.70
382 Manufacture of machinery, except electrical	7.35	4.08
383 Manufacture of electrical machinery apparatus, appliances and supplies	5.34	3.33
384 Manufacture of transport equipment	8.69	3.34
385 Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods	0.95	2.55
390 Other manufacturing industries	0.95	3.73

^{1/} Source: United Nations Statistical Office; sectoral groups taken from the International Standard Industrial Classification of all Economic Activities, E.68.XV.8.

172. The following sections, dealing in succession with Trinidad and Tobago, Brazil and India, follow the same sequence in their treatment of material drawn from the country studies. A preliminary statement of the position each country was in when factory-based industrialisation began is followed by a brief description of the steps through which the contemporary industrial pattern emerged. Exploration of the role of external co-operation in moulding and supporting this industrial structure allows some assessment to be made of the socio-economic impact of past industrialisation and international resource transfers. Projections of likely patterns of industrial growth over the coming decades to the end of the century are combined with the results of this assessment to provide grounds for recommendations concerning the need for future international industrial co-operation, and desirable mechanisms for making effective use of it.

5.2 Trinidad and Tobago

"The economics of deliberate change needs to focus on those institutions and mechanisms which inhibit and sometimes stunt the natural process by which a society would normally feed, clothe and shelter its people out of the resources of its own place and through the resourcefulness of its own people." L. Best.

5.2.1 The Beginnings of Modern Industrialisation

173. The search for "what particular and distinct social creation emerged from the mix between European enterprise and the Caribbean culture, incorporated into a web of international trade and payments over the past 500 years" informs the starting point of this study. "The distinguishing feature of the social formation in the post-Columbus Caribbean is that it is virtually a new creation, its institutional inheritance from the pre-Columbian era being largely immaterial. ... Here capitalism was able not only to choose but to prepare the ground on which it would play. The social order was built up by controlled immigration into the definitive context of the slave plantation. In the 200 years leading up to 1840, the Caribbean economy in general, and Trinidad and Tobago in particular, are said to have closely approximated the essential features of a model described as 'Pure Plantation Economy' which consists of a single sector producing only staple for the purpose of export. Pure Plantation Economy constitutes the extreme case of a hinterland or peripheral economy. It is not merely dominated by metropolitan economy but is created by the latter for the sole purpose of providing commodity supplies. Hence, there is a category of intermediate output but it is specific to export production at the micro-level where it is all used up."^{1/}

"...The central conflict in Plantation Economy is between staple activity on the one hand and residentiary activity on the other. The owners of the hinterland economy are absentees and have no use for surplus which is not realised in foreign exchange. Hence,

^{1/} TT. An outline description of the full model, together with its accounting framework, is provided in the text.

the economy is instituted for the purpose of producing staple. The power of cumulation then makes residentiary activity increasingly less feasible to launch let alone sustain. Initially the problem appears as one of income distribution. Surplus is high in relation to product and exercises a priority claim upon it so that accumulation proceeds at a rapid pace engrossing land at the extensive margin and deepening slave-capital at the intensive margin. As the system expands - more so on island as against mainland - residentiary activity is increasingly frustrated as much by the unavailability of land as by the growing export specialisation of infrastructure, techniques and skills and the feebleness of demand for domestic output on account of the long history of forming taste for imports. Thus the specialisation in export staple tends to perpetuate itself and to drive out residentiary activity altogether. ...

... It must be seen that this effect is attributable to the indiscriminate expansion of exports in the first place, itself a result of the under-appropriation of product by the slave-community (and its over-appropriation by the planter-community) and of the related need for surplus to accrue in foreign exchange. Here we have the clue to the post-war failure of industrialisation programmes in hinterland or peripheral economies which had a career of staple specialisation. The Caribbean countries provide excellent examples with Trinidad and Tobago being perhaps one of the most extreme of the cases."

174. In the century 1838-1938 following emancipation, the conditions appeared to be ripe for the development of a residentiary economy and industry. The study points out that this development did not take place, however, because of a mixture of discouraging public policies, the distortion of domestic demand that was a legacy from the past, and low wage rates in the export sector that also inhibited growth of the local market. A process of staple diversification and substitution took place (sugar to cocoa to a revival of sugar, followed by petroleum domination of the staple sector). The big change occurred with the onset of worldwide depression in the 1930s followed by the second World War, "enforcing a delinking of the staple sector from its metropolitan connections", thereby vastly increasing market opportunities for domestic entrepreneurs. Demand was induced by the establishment of a US base, and the cut-off of traditional import supplies led to the islands producing manufactures for "home" consumption. Food industries, gas, watches, oil refining, construction industries including asphalt, limestone products and roofing tiles,^{1/} based on ample national supplies of power, skilled manpower and raw materials (rubber, oil, timber, clay, limestone), formed the basis for an embryonic but robust residentiary manufacturing sector, "matching domestic raw materials and skills (supply) on the one hand with the needs of the home population (demand) on the other, the achievement being attributable to vigorous intervention and intermediation on the part of a rising class of small-scale and own-account managers and entrepreneurs."^{2/} By 1946, the manufacturing sector employed a total of 38,000 workers (18 per cent of the total, compared with 25 per cent in agriculture; see TT, table III).

^{1/} See TT, Appendix B for list of industries in operation in 1942/43.

^{2/} TT, part B.

175. The importance of industrialisation for the West Indies was argued most forcefully from 1939 onwards by Arthur Lewis, in a challenge to official colonial policy, resting the case chiefly on the existence of "over-population". "Agriculture ... will yield a decent standard of living only if numbers engaged in it are drastically reduced. ... Creation of new industries is an essential part of a programme for agricultural improvement. Hence, industry was not an alternative but a necessary complement to agriculture."^{1/} However, Lewis felt that industries could only be established through direct foreign investment, bringing with it capital, markets, technical and managerial skills, concluding that "the islands cannot be industrialised to anything like the extent that is necessary without a considerable inflow of foreign capital and capitalists, and a period of moving and fawning upon such people."^{2/} It was also assumed that high domestic savings would accompany national income growth induced in this way, eventually allowing domestic entrepreneurs to replace foreign owners of capital.

176. The Lewis strategy, which ultimately was to influence and shape government policies throughout the West Indies, and based on the recent experience of Puerto Rico, was to attract DFI through the ample supply of low-wage, unskilled labour and a plethora of legislation and institutions including Pioneer Industries Ordinances, a federal administration and customs union, industrial development corporations and banks, industrial estates, protected home markets and fiscal concessions. "Lewis had advocated an entire apparatus for harnessing the cheap labour of the West Indies for producing manufactures for export. Labour was to be a new 'quasi-staple' which was being exported."^{3/} However, little attention was paid to the nature of industries established (whether import substitution entailed a far-reaching displacement or a mere import replacement). The locus of entrepreneurship was also erroneously identified, and, finally, the accompanying notion of traditional versus modern sectors proved misleading: "In the case of the West Indies, for example, it is the 'traditional' small-scale and labour-intensive sector and not the 'modern' large-scale and capital-intensive sector which had been the source of innovation and dynamism. ... The modern sector had been a locus of lifeless once-for-all technology transfer; the own-account artisan sector had become a restless seeker after accumulation and technical progress having come into being only when the slave-export sector fell into maturity and decline." All this resulted "in the sacrifice on the altar of foreign investment of an extremely dynamic class of national managers and entrepreneurs. An associated error was to be a mis-projection of the savings-effect of increased national income. As the own-account class collapsed, wages and salaries came to constitute the lion's share of incremental income and inevitably the propensity to consume and to import was to remain high and even to increase."

^{1/} W.A. Lewis, *Industrial Development in the Caribbean*, in *Caribbean Economic Review*, Vol. 1, December 1949, quoted in TT, part B.

^{2/} *Ibid.*

^{3/} TT, part B.

5.2.2 The Pattern of Industrial Evolution and its Impact on Development

177. Industrial promotion along these lines proved successful in terms of the overall growth of the manufacturing sector. During the period 1951-61, real GDP at market prices increased at an average annual rate of 11 per cent. The number of "pioneer industries" benefiting from the Aid to Pioneer Industries Ordinance of 1950 grew to 106 by 1960. The manufacturing sector growing at 9 per cent per annum made a constant 10 per cent real contribution to GDP, while the share of agriculture fell from 17 per cent to 12 per cent. In the 1960s, while agriculture declined further, the share of manufacturing rose from 13 per cent to 18 per cent through a process of import replacement or substitution rather than displacement: its traditional import-bias continued unabated. The share of imports to GDP rose from 58.2 per cent in 1951 to 66.9 per cent in 1971. In a 1968 survey of 35 pioneer enterprises, the majority admitted to importing more than 70 per cent of their raw materials on grounds of cost and availability, showing the import dependency of the new manufacturers. Inter-industry tables for Trinidad and Tobago with their miniscule coefficients of interdependence demonstrate the "extent to which the staple (petroleum) sector remained essentially on the margin of the economy... In a very real sense Trinidad and Tobago appears to have served as a mere locus of mineral staple extraction for petroleum corporations." Downstream operations have been very limited for a domestic resource that could have formed the principal base for residentiary activity. The input-output table shows that for all major industries, import requirements exceed 25 per cent of total purchases. Large fluctuations in the growth path of the economy (from 10 per cent annual rate from 1955-61, it fell to 3-3 1/2 per cent from 1962-1965, reviving to a level of 6-7 per cent in 1966-68) could be ascribed primarily to fluctuations in the production of crude petroleum, rising at more than 10 per cent per year in boom periods and less than 2 per cent in downswing ones. For the five years 1969-73, for essentially the same reasons, the plan target of 4.3 per cent rate of growth of real GDP was underfulfilled by 2 per cent. While petroleum revenues declined between 1968-72 owing to the depletion of known oil reserves, current account deficits grew sharply, leading to increased foreign and domestic borrowing and high rates of inflation. A major crisis was averted only by the dramatic increase in petroleum prices in 1973.

178. External trade, apart from petroleum, has continued along traditional lines of linkage with the UK, USA, Canada and the British Commonwealth (about 40 per cent of imports and two thirds of exports). Regional marketing was prompted through the setting up of the regional free trade area CARIFTA in 1968, succeeded by the Caribbean Community CARICOM in 1973. Although the latter introduced a common external tariff and a harmonisation of fiscal incentives, no production integration or regional industrial programming of the type envisaged by Lewis in the 1940s has taken place. On the other hand, the dependence of Trinidad and Tobago on the regional market created by CARICOM has been made clear by the direction of its manufactured trade: in 1972, although only 12 per cent of total exports consisted of manufactures, CARICOM absorbed 42 per cent of its total exports of manufactured goods (and Trinidad and Tobago alone accounted for 52 per cent of the total regional trade in manufactures).

179. The nature of industrialisation has derived its thrust from two major categories dividing up the total product in a 30:70 ratio (1973): (a) minor resource industries oriented mainly to construction activities, and (b) assembly industries ranging from apparel and food processing to consumer durables (mainly cars and household appliances). In recent years, "helped by vigorous advertising, protection and CARIFTA, durables came to occupy the dynamic centre of consumer spending."^{1/} Its output increased from 35.7 per cent of total manufacturing output in 1966 to 45.8 per cent in 1972, spurring ahead at 10.2 per cent as against food and related goods at only 1.9 per cent. By 1972, over 12 per cent of consumer expenditure was devoted to consumer durables, "and the prevalence of low margins of domestic value added supports the widespread assertion that industrialisation has meant little more than the organised marketing of the manufactured outputs of metropolitan countries. The Pure Plantation Economy imports in order to export; it has no other reason for being. The contemporary Caribbean economy has now acquired the role of importing so that the metropolitan countries could export."^{2/}

180. In the industrialisation effort, partnership between the state and private business has required the former to provide the infrastructure, the latter the directly productive activities. The financing of public investment grew through taxing current surpluses but also heavy reliance on loans raised at home and from external markets and international institutions. While current government revenue rose from an average of 16.4 per cent of GDP in 1951-61, the proportion rose to 18.4 per cent in 1971-72 (an annual increase of 10.2 per cent), but expenditure rose faster at 11.1 per cent per annum. Public capital works were financed through debt, so that the current surplus to debt ratio plummeted from 5:2 to 1:2, and gross debt doubled from 13.8 per cent of GDP in 1953 to 25.3 per cent in 1973.^{3/}

181. Reliance on foreign sources of investment was apparent from the early days when almost complete ownership of sugar and petroleum industries was established. Relating DFI to the previous year's GDP, the average share of DFI in GDP over the 24 year period 1951-74 has been 9 per cent, with peaks of 16 per cent in 1957 and 16 per cent in 1971. In the 11 years 1965-66, it averaged 40 per cent to 60 per cent of Net Domestic Capital Formation (reaching 81 per cent in the peak year 1957) and a much higher proportion (about 75 per cent) of total business investments. Of a total 283 manufacturing enterprises established by 1966, 68 were foreign (25 per cent), although they were larger than average (of 17 establishments employing more than 250 persons, 10 were foreign) and concentrated in key industrial sectors such as petroleum and petrochemicals and sugar, as well as exerting their influence on industrial growth through domination of banking and finance. UK firms accounted for 35 per cent of all manufacturing concerns, the US for 18 per cent, followed by Canada. US corporations have been gradually overtaking UK concerns as the major foreign investment source, at the same time as the chief trading partner status was also reversed.^{4/} In the single year 1966, the investment figures were US (\$ 145 m), UK (\$ 24.7 m) and Canada (\$ 2.4 m).

^{1/} TT, part C.

^{2/} Ibid.

^{3/} Ibid.

^{4/} Ibid.

182. Foreign loans, both bilaterally and multilaterally negotiated, have been used for project financing, primarily in the areas of infrastructure facilities: transport, utilities, communications, etc. For the period 1962-67, loans were distributed by country as follows: UK (\$ 160.2 m), US (\$ 102.9 m), Canada (\$ 18.7 m) and others (\$ 36.2 m). External debt, however, has been quite low in comparison with other developing countries. In 1967-72, debt service amounted to only 2 per cent of adjusted export earnings.^{1/} The problem is one of the distribution and allocation of external resources: the extent to which the use of external factors promoted optimum use of domestic entrepreneurship, management, professional services and labour. For instance, unemployment has risen steadily in the past 30 years.^{2/}

Unemployed as a percentage of the economically active population:

	<u>1946</u>	<u>1956</u>	<u>1966</u>	<u>1967</u>
1000	14.6	17.0	49.0	60.1
%	6.8	6.4	13.9	15.0

This should be seen against a rise in population over the same period of 95 per cent, from 563,200 to 1,098,600 (the rate of population growth fell off sharply after 1966 to a rate of only 1 per cent per annum, down from an average rate of 3 per cent per annum previously). Estimates for the rate at which manufacturing was able to provide new employment show 7000 jobs for the period 1950-63 (or only 9 per cent of new entrants to the labour market), while from 1964-74, another 15,000 jobs may have been provided. In spite of participation rates falling and some 90,000 people migrating (of whom one third were potential job-seekers), the labour force expanded at a rate of 1.6 per cent in this latter period, and unemployment grew at 4 per cent per year. Emigration rose dramatically at the turn of the 1970s, resulting in a serious loss of skills to the country. Even between 1962 and 1968, a total of 10,912 skilled and qualified people left for the US, Canada and the UK (in the proportions of 57 per cent, 37 per cent and 6 per cent).^{3/} Industrialisation far from fulfilled its promise of absorbing most of the population increase, or the over-population in agriculture identified by Lewis in the 1940s.

183. Foreign investment also had a major destructive effect on the fledgling residentiary sector. "Precious few of the artisan-type "firms" of the early phase seem to have graduated to the later phase in fields such as the motor-repairing industry, furniture-making, garment-making, manufacture of household appliances, metal-working, etc., in all of which there had occurred a proliferation of small business. As final imports and import-replacing assembly prevailed, what therefore was displaced if not lost was not merely employment in a so-called traditional sector but a vast reservoir of entrepreneurial and managerial potential."^{4/} This is indicated by the steady decline of own-account workers

^{1/} TT, Appendix C, table 8e.

^{2/} TT, part C.

^{3/} TT, Appendix C, table 2d.

^{4/} TT, part C.

as a percentage of total workers (from 28.5 per cent in 1946 to 15 per cent in 1971/72). In turn, the study points out that the disappearance of own-account workers has weakened essential linkages between agriculture and industry through its effect on enterprise-induced backward linkages, wages etc. Displacement of the own-account sector employment also led to an inefficient inflation of public sector jobs, the "employer of last resort".

184. Aggregate DFI inflows in the 24 years 1951-74 amounted to \$ 2,095 m (annual average \$ 87 m) while the outflow of investment income totalled \$ 2,819 m or higher by 35 per cent (annual average \$ 118 m). Total net income from direct investment claimed 18.8 per cent of export earnings during the period (over 20 per cent in 14 of the 24 years). Rent accrued mainly to US corporations in the petroleum sector. The loss to the national economy was aggravated by the practice of transfer pricing and a range of measures that led to inflated product prices. Items on the Negative Lists amounted to 500 by 1978, an increase of 20 per cent over 1972. Fiscal incentives offered to pioneer industries (both foreign and domestic) also had large direct effects on government revenues, with a steady rise in imports exempted from duty (34.2 per cent per year from 1967 to 1976). The revenue foregone from fiscal concessions to firms increased from \$ 25.8 m to \$ 182.8 m.

185. Income distribution in Trinidad and Tobago was first estimated from the Household Budget Survey of 1957/58, showing a Gini coefficient of 0.40, with the top 5 per cent enjoying a share of 22.5 per cent of total incomes and the lowest 20 per cent with only 3.5 per cent of the total. By 1972, with the unemployment rate twice as high as in 1946, "the negative impact of industrialisation on income distribution amongst the households emerged as clearly as in respect to employment."^{1/} The Gini coefficient has risen to 0.51, the richest 5 per cent enjoying 24.5 per cent and the lowest 20 per cent only 2.2 per cent. Some 35.1 per cent of households fell below the "poverty line", with over 40 per cent of plantation households classed as poor against 25 per cent for the port areas. After the oil price adjustments of 1973, public policies changed dramatically, with a large transfer of incomes through welfare expenditures and a reduction of income taxes. These led to an apparent reduction of income inequalities as measured by the Household Budget Survey of 1975/76, showing a fall of the Gini coefficient to 0.474. However, the situation had shown no improvement over that of 1957/58.

186. If the early industrialisation strategy was dependent on gradually higher marginal rates of domestic savings, the end of the first decade of industrial promotion was disappointing in showing a declining proportion of personal savings to income. Those with incomes below \$ 100 per month were spending, in 1972, five times their average income, while only those with incomes above \$ 900 per month were saving at all. The displacement of own-account operators by wage earners has been one factor in this performance, since wage-earners, mostly dependent on public sector employment and paid in cash appear to have a higher propensity to spend; assembly manufacturing promoted domestic sales through advertising and real consumer expenditure was positively correlated with outlays on durables.

^{1/} TT, part C.

Skewed income distribution also favoured the development of consumer durables. In 1971/72, income groups below \$ 200 per month averaged 6.2 per cent expenditure on consumer durables, while groups with more than \$ 900 averaged 16.8 per cent.^{1/} At the same time, the poor had such low real incomes as a result of high prices for food that in 1971/72, 40 per cent of the households could not meet the requirements of an adequate level of food consumption.

187. These have been the effects of industrial policies in the past that have tried to promote new industries through incentives and state-supplied facilities. "In practical terms, the promotion of Pioneer Industry meant providing incentives to private business through the grant of income tax holidays, of rebates of import duty, of accelerated depreciation allowances, investment allowances and depletion allowances in the case of petroleum companies, and of protection by way of Negative Lists of quantitative restrictions on imports. In addition, it was envisaged that cheap utilities, ample factory space and adequate infrastructure would be made available while the terms for raising domestic capital and bank credit would favour this priority sector. The shift to profits would be employed as a deliberate means of industrial advance - as would be the shift to factor incomes going abroad, the corollary of encouraging foreign investment."^{2/}

188. For the future, the study poses the basic question whether the high export income now available to the country will be used to enlarge the staple economy or to undertake a major transformation. As a result of social unrest in the early 1970s, and greatly strengthened by the economic momentum provided by the "oil bonanza", three new measures have already been taken by the state that might indicate future orientations: employment promotion through special works programmes; the promotion of small industry and residential activity in agriculture through marketing and credit assistance, and a policy of joint ventures and direct state control of large enterprises in order to mitigate TNC domination. Since 1973, the Caribbean Community had stimulated deepening of the industrialisation process, and incentives to increase local value-added and research were being encouraged through harmonised regulations. The 1970s saw a very much larger role for the state in directly owning and controlling industry, making it the prime mover in new areas of production and job creation: From acquisition figures that added up to \$ 50 million between 1968 and 1972, in the years since 1972 another \$ 247 million had been spent on acquiring state holdings, giving a total initial value of \$ 364.5 million in the hands of the state, "the lion's share in enterprise completely owned".^{3/} Together with the much larger welfare expenditures referred to earlier, capital expenditures by the state through transfers to executive agencies has grown even faster than the rate for acquisitions. In 1977, for instance, the state spent 31 per cent of GDP at market prices. These moves, however, do not constitute an unequivocal change in the dynamic processes of industrial transformation which, in the past, through "resource mobilisation, technological innovation and taste creation, have served only to carry the economy progressively further away from self-reliance, towards larger gaps in resource availabilities and therefore more towards external dependence."^{4/}

^{1/} TT, Appendix C, table 5f.

^{2/} TT, part C.

^{3/} TT, part D.

^{4/} Ibid.; Projections for staple expansion 1974-2000 are given in Appendix D 2.

5.2.3 Future Orientations in Industrialisation and Their Implications for International Co-operation

189. The new industrial regime's strategy for diversification and restructuring may be seen through its projects divided into (a) major industrial, (b) minor manufacturing, (c) own-account activity and (d) welfare/construction. The first of these, in contrast to typical post-war ventures, are an attempt to "integrate the petroleum and natural gas industry into the matrix of national production" although the administrative and technical capacity to plan and implement them is limited and may lead to further managerial and technological dependence on ICs, and their financial requirements (for energy-based projects) are enormous (about \$ 4 billion). Among the minor manufacturing projects are food processing and housing construction components based on locally available commodities and materials. If they are export-oriented, however, they may be inhibited by high wage-costs and nascent protectionism from poorer regional trade partners. Own-account activities require infrastructure development and a diversion of demand away from imports towards domestic production for their viability, while welfare construction projects impose huge strains on present capacities, thereby engendering the risk of excessive external involvement. All these areas require external assistance in technology and management as well as in capital, which is being sought through a comprehensive scheme of "government to government" arrangements^{1/} with a range of industrialised countries - each involves a package deal covering a transfer of private sector real resources required for the project in question.

190. The proper framework for (desirable) future international co-operation for industrial promotion is provided by a "model of residentiary growth",^{2/} which sets out to reverse past trends in which "Trinidad and Tobago's agricultural sector and their resource-based manufacturing have been progressively declining in importance, yielding priority to the assembly of imported inputs in a variety of areas including the (small) livestock and the consumer durable industries", and instead promotes the "process by which domestic factors and resources would be cumulatively engaged in productive and rewarding activity".^{3/} The government's responsibility in stimulating residentiary growth must consist in maintaining full employment and developing national enterprise and management, controlling the level of foreign exchange earnings from staple exports according to national needs in different sectors, and orienting the economy towards the kind of services development that makes greater use of domestic creativity and skills.

191. Residentiary growth implies a self-reliant economy, where "self-reliance is not to be confused with self-sufficiency; international trade will not be discontinued but will indeed be conducted at a higher level of activity owing to the greater mobilisation of productive resources, and the higher level of output, income and spending. What will change

^{1/} Detailed in TT, Appendix D 3.

^{2/} TT, Part D.

^{3/} Ibid.

is the composition of imports and exports and what will fall is the ratio of these two to gross domestic product."^{1/} In the Caribbean context, a self-reliant economy may be divided into the three main sectors of (a) staple, (b) welfare and (c) residentiary.

192. (a) The staple sector in the model assumes the role of a "Port of Trade" which provides the economy with the capacity to import (rather than specialise in exports) through a system of "administered trade", insulating the domestic economy institutionally from the rest of the world. Activities in the staple sector may be further divided into a state-owned and controlled export sub-sector that will consist of mining, extraction and downstream industries for the transformation of petroleum and natural gas, almost entirely dependent on imported technologies and managerial services, highly capital-intensive and employing negligible labour. Its function will be to provide foreign exchange for the rest of the economy. The import sub-sector of the staple sector will operate assembly-industries at home with imported inputs according to the import needs of the non-staple sectors, as well as import final consumer and producer goods.

193. (b) The welfare sector, exercising first claim on the foreign exchange resources provided by the staple sector, will operate all administrative and social services and public utilities, leaving a residual of intermediate and capital imports consistent with full employment in the residentiary sector. Its output must be priced in such a way as to ensure the broadest possible consumption.

194. (c) The residentiary sector, including production in agriculture, manufacturing and services, should be totally in the hands of own-account enterprises and is characterised by the "fullest exploitation of domestic productive potential. ... Entrepreneurship, labour and management will be simultaneously provided and the reward to them will be a mixed factor income. This is the institutional precondition for the evolution of technology and organisation in a direction which is consistent with full employment."^{2/} Consumption may be collective for the goods and services provided by the welfare sector, and individual (or household) for the supplies provided by the residentiary sector, but the existing patterns of consumption dictated by import capacity must be discontinued. A feature of a desirable consumption policy that in turn will promote a greater activation of domestic capabilities is that "for each household and citizen group there must be a fair balance in total consumption between goods and services, between imports and domestic outputs, and between utilities and basic goods, on the one hand, and luxury supplies on the other." Apart from the product mix, technology choices should also optimise the use of domestic capabilities. "The geographical juxta-position of agriculture and industry, which an island environment admits, the choice of business organisation which would combine own-account capital with own-account labour and other own-account factor inputs, and conceivably, employment of some of the population (and perhaps of all of the households), part-time in the welfare sector and part-time in the residentiary sector, might all add up to an economy

^{1/} TT, Part D.

^{2/} Ibid.

in which supply would create its own demand in the fashion envisaged by J.B. Say's celebrated law."^{1/} The speed with which such a self-reliant economy can be created is obviously dependent on the scope for creative intervention provided by the present conjuncture: "the current importance of the staple sector, of capital-intensive technology in the export sector, and of merchant-assembling in the import replacing sector must be acknowledged as a fact of life." Nevertheless, the focus should remain on the decisive contradiction between residentiary and staple activity; operable indices of import displacement (as against import replacement) must be devised as policy guides; and one should identify the signals by which the progress of the economy towards self-reliance may be monitored.^{2/}

195. In describing options for the future of industrialisation in the Trinidad and Tobago economy with their implications for international co-operation, the study thus looks at two alternatives: the projections to the year 2000 provided by tracing the consequences of the new industrialisation regime instituted by the government since 1974; and the "recommended" strategy of self-reliance and residentiary growth.^{3/} The first of these relies on large-scale industries making heavy use of imported capital-intensive technologies, obtained primarily through joint venture packages between the government and TNCs. In addition, state enterprises and local corporations would be established. In the finance area, the country would resort to foreign borrowing with a high loan to equity ratio (e.g. through use of bond markets), and a free trade regime with some protection for traditional manufacturing would be followed. Co-operation, including trade, would be mainly of a North-South nature with attempts to obtain improved terms of resource transfer through joint ventures (and e.g. Codes of Conduct), while there would be room for limited participation in regional groupings and enlarged South-South trade. The second follows an industrial and technological strategy of "walking on two legs", using imported capital-intensive technologies with TNC participation for the energy-based major industrial activities of the staple sector, and for import-replacing manufacturing in the assembly industries while labour-intensive resource-based activities are followed in the residentiary and welfare sectors. Co-operative R + D and use of joint technology registries etc. are likely features. Recourse to external finance would be much more limited and selective, and more diversified in terms of partners, including participation in regional payments unions. Trade would be "administered" and selective and more likely to involve bilateral exchanges and preferential trading schemes in a South-South direction. Both these options represent significant departures from the levels and mechanisms of co-operation employed in the 1951-73 period, although the second constitutes a more fundamental break that is difficult to foresee for the immediate future.

196 Specific recommendations for international action stem from the choice of a path of self-reliance that calls for measures of co-operation involving greater decentralisation and sensitivity to national and regional differences among developing countries. As a first step, the focus should be on regional and sub-regional institutions (i.e. a break-up

^{1/} TT, Part D.

^{2/} Ibid.

^{3/} See the three matrices given as Appendix to Part D.

of the UN Regional Economic Commissions into three or four units) that can monitor and study developments in the nature of production systems as well as in trade and finance. Evolution of enterprise co-operation along the lines of joint venture arrangements could promote self-reliance if domestic managerial and research capabilities were actively developed in a residentiary context at the same time. At the regional level, five measures are proposed:

- "1) A progressive widening and deepening of CARICOM ultimately to embrace some 30 independent island-states stretching from Belize to Cayenne and including Cuba and all the Greater Antilles as well.
- 2) Establishment of a Caribbean Common Fund in support of joint commodity exports, joint import-purchasing and intra-regional swapping.
- 3) Establishment of a Regional Resource-Combination Agency as a Division of a broadened Caribbean Development Bank.
- 4) Establishment of a Foreign Exchange Pool - for the West Indies initially - to provide mutual balance of payments support.
- 5) Establishment of a Regional Technical Service to man these agencies as well as the Economic Commission for the Caribbean with its 'Regional Techretariat'.^{1/}

5.3 Brazil

5.3.1 The Beginnings of Modern Industrialisation

197. As with Trinidad and Tobago, a historical reading of Brazilian industrialisation shows the export-led character of the start of the process. Income from export production created urban enclaves where a modest industrial sector catering to domestic demand could be established, subsequently assisted by periods when difficulties with the balance of payments and disruptions of imports encouraged the local substitution of imported manufactured consumer goods. The mass of wages and factor payments in the export sector constituted the embryo of the domestic market. "At the end of the century, the expansion of the export trade and its supporting services - transport, warehousing, banking, etc. - occasioned the creation of a sizable urban economy in some of the larger Latin American countries. In this way, a more concentrated domestic market for manufactures came into existence, which provided a basis for industrialisation through import substitution. ... Mexico and Brazil started quite soon to protect infant industries and, whenever external trade declined, industrialisation spurts occurred, taking advantage of idle capital and labour, set free by the reduction of export activity."^{2/}

^{1/} TT, Part D.

^{2/} Brazil.

198. Manufacturing activity had been prohibited in the colonial period up to 1808 when growth had depended on primary exports of one commodity after another: Brazil wood, sugar, gold, diamonds, rubber, cotton, cocoa and finally coffee. During the imperial reign of Pedro I that followed from 1822-1889, the beginnings of industrial activity in food products, construction materials, textiles, iron and iron products and ships, together with infrastructure in transport and communications, took place in the context of free trade policies imposed by the British (the clauses of a treaty signed in 1827 were only disregarded later in the century with tariffs on imported textiles). Textiles and non-durable consumer goods were produced by Brazilian entrepreneurs and by immigrants to replace not only imports but also the products previously manufactured in artisanal units by slaves for their own consumption. "From 1885 onwards, European immigrants increasingly replaced slaves as wage-workers in the coffee plantations."^{1/}

199. In general, however, a succession of profitable opportunities for export in agriculture and mining, combined with national power in the hands of large landowners, produced policies that were favourable to agricultural and commercial interests. It needed the first World War to provide the first major shock to the old economy by disrupting overseas supplies and providing new purchasing power through inflationary financing, and huge profits in shipping and trading as well as manufacturing. The collapse of the world coffee market in 1929 provided a large additional impetus. For the first time, the sector linked with the domestic market provided the key to capital formation and offered better investment opportunities than the exporting sector. "Industrial production, entirely channelled with the domestic market, underwent a decline of less than 10 per cent during the depression and by 1933 had regained 1929 levels."^{2/} In the first phase, industrial expansion took place through more intensive utilisation of existing production capacity, particularly in textiles. Second-hand equipment, bought cheaply from the countries hit hardest by the depression, also contributed to rapid investment in manufacturing. As a result of exchange depreciation, the price of imported capital goods subsequently increased sharply, while the growth of demand for such goods remained high, leading to a major increase in output of products such as iron, steel and cement. Net investment in 1935, for instance, exceeded 1929 levels at a time when capital goods imports reached only 50 per cent of their 1929 figures. Industrial output grew by about 50 per cent between 1929 and 1937 and per capita income by 7 per cent, in a period when the US economy, for instance, showed a substantial decline of per capita income. By 1939, import-substitution of non-durable consumer goods had progressed very far. Imports constituted only 3.1 per cent of the total consumption of textiles, 3.1 per cent of processed goods, and 5.6 per cent of beverages.

^{1/} Brazil.

^{2/} C. Furtado, *The Economic Growth of Brazil*, p. 217, University of California Press, Berkeley, 1965.

5.3.2 Brazil's Industrial Growth in the Context of Latin America

200. Compared with Argentina, the other economic giant of South America, Brazil's early period of import-substituting industrialisation was much slower: between 1910-14 to 1925-29, Argentina's manufacturing output grew at an annual rate of 4.4 per cent while that of Brazil was 2.6 per cent, over approximately the same period.^{1/} Argentina had followed a policy of exporting processed agricultural products (mainly meat and leather) for which world demand remained high for the first three decades of the century. (Already by 1914, 38 per cent of Argentina's labour force was in manufacturing and 21 per cent of its manufacturing output was exported.) When world market conditions dramatically changed after 1930, the relative success of the two policies was reversed, and while Brazil's manufacturing output was multiplied over 20 times between 1939 and 1976, the multiple was less than five for Argentina.

Manufacturing value added in Latin America 1939, 1949, 1958, 1967 and 1976^{2/}
(in \$ '000, 1970 prices) (percentages in parentheses)

<u>Country</u>	<u>1939</u>	<u>1949</u>	<u>1958</u>	<u>1967</u>	<u>1976</u>
Brazil	1,155.4 (18.7)	2,315.4 (21.3)	5,012.9 (26.5)	8,567.7 (26.5)	23,354.3 (37.6)
Argentina	2,321.6 (37.6)	3,284.8 (30.3)	5,080.8 (26.9)	6,910.8 (21.4)	10,525.8 (17.0)
Mexico	1,061.9 (17.2)	2,194.1 (20.2)	3,781.8 (20.0)	8,096.5 (25.0)	14,425.2 (23.3)
Latin America	6,186.6 (100)	10,846.3 (100)	18,935.1 (100)	32,375.2 (100)	62,024.0 (100)

201. The preponderant weight of the three countries Brazil, Argentina and Mexico in the regional economy of Latin America is shown by their increasing proportion (combined) of regional MVA from 73.5 per cent in 1939 to 77.9 per cent in 1976, although the roles of Brazil and Argentina have been precisely reversed over time: in 1939, Argentina's share of regional MVA was 37.6 per cent and Brazil's 18.7 per cent; in 1976, Brazil's was 37.6 per cent and Argentina's 17.0 per cent. Mexico's industrial share increased from 17.2 per cent to 23.3 per cent, after overtaking Argentina in the early 1960s. These were the only three economies of the region with sizable internal markets in 1939 (over \$ 6 billion GDP each), enabling them to advance to the level of intermediate goods in the process of import substitution. Only in Argentina's case, the country was exceptionally hard hit by the loss of its export markets, consequently weakening its power to purchase essential equipment imports (its total imports of goods and services actually declined from 1945 to 1961 while those of Brazil and Mexico increased by 53 per cent and 57 per cent, respectively, in terms of annual averages).^{3/} Recent history has shown that industrialisation was most

^{1/} Brazil.

^{2/} Brazil, Appendix table 4.

^{3/} Brazil, table 6.

rapid in those countries of the region that, at the beginning of the period, had a sizable rural "surplus" population that could be incorporated into the modern sector and also had large absolute populations representing potentially significant domestic markets. Overall for the region, manufacturing increased its share of GDP from 16.5 per cent in 1939 to 25.4 per cent in 1976, but this growth of industry has been quite unevenly spread among the countries of Latin America.

202. The essential determining factor behind their differential rates of growth has been the extent to which they have been able to make use of technological advances generated in the industrialised countries, primarily through the medium of the TNCs.^{1/} The extent to which international trade in manufactures by Latin American countries has been intra-firm in nature bears out this statement. "This is not to imply that every less developed country has to depend on TNCs for its industrialisation, but that TNCs offer to some countries an easy access to technology, resources and external markets. ... One could say that, until 1969, with the single exception of Cuba, all Latin American countries have been trying to industrialise with the help of transnational capital."^{2/} Within the region, TNCs have tended to concentrate their investments mainly in Brazil and Mexico (increasing from \$ 2.4 billion to \$ 6.9 billion in Brazil, 1971-76, and in Mexico from \$ 1.7 billion to \$ 3.7 billion in 1971-75). The same two countries also made the heaviest use of international capital markets, accounting for over one-third of all DC loans in 1976, and absorbing about two thirds of the net flow of foreign finance to Latin America in 1977 and 1978. The size of their external debts shows a corresponding increase, with 63 per cent of the total net payments of interest and profits (\$ 9.3 billion) paid by Latin America in 1978 coming from only Brazil and Mexico. TNCs have also helped to increase their manufactured exports, not only by pressuring their home governments to lower barriers to the entry of goods from DCs (both to commodities they themselves help to produce in DCs as well as "traditional" manufactures such as textiles and footwear) but also by finding markets in other DCs, frequently within regional common markets. In 1974-77, 38-47 per cent of Brazil's manufactured exports went to other DCs, mostly in Latin America.^{3/} Thus, Brazil and Mexico may be said to have followed an industrialisation pattern that falls within a changed international division of labour providing a new role for the less developed partner: "that of producer of manufactures, the costs of which depend mainly on the price of little skilled labour and on economies of scale. In Latin America, Brazil and Mexico increasingly adopted this model, although it was also tried, with less success, by Argentina and Colombia."^{4/}

203. An alternative model to the international integration described, and which may be termed one of "regional integration",^{5/} has been that attempted by signatories to the Andean Pact in 1969, and which aims at widening industrial markets for countries with

^{1/} Brazil.

^{2/} Ibid.

^{3/} Ibid., table 6, Appendix.

^{4/} Ibid.

^{5/} Ibid.

smaller national purchasing power, establishing sectoral programmes of industrial development as part of planning joint industrialisation, and harmonising economic policies including those towards foreign capital (Decision 24). Even the stringent conditions of Decision 24, however, are not likely to successfully combat dependency on TNCs since the assumed rate of technological transfer resulting from the new policies is likely to be overtaken by the much faster rate of technological innovation in the ICs controlled by TNCs. Cumbersome to negotiate, and dealing with disparate political regimes anxious to attract the maximum TNC participation to themselves "the biggest success of the Andean Pact, until now, is that it is still in existence and functioning."

204. The third type of model followed in Latin America has been that of Cuba since 1961. The sudden breaking of trade relations with the one country on whom it had become almost totally dependent for supplies and markets imposed self-reliance, and a sharp decrease of external dependency, as a national goal, although its domestic market of 7 million people was too small to attain a high degree of self-sufficiency. Moreover, problems arose with a poorly designed programme of import-substitution which paid insufficient heed to locally available raw materials and intermediate goods, resulting in an increase of imported inputs and heightened external dependency in the first years after the revolution. Staple orientation towards sugar exports was reaffirmed by post-1964 policies which aimed at providing all industrial support to the sugar industry. The learning process necessary after a half-century of "semi-colonial domination" had been underestimated. After 1970, a form of regional integration with the COMECON countries (becoming a full member in 1972) was instituted in the framework of a more balanced growth path which brought improved performance in terms of a 10 per cent per annum rate of growth in 1971-75, estimated to stabilise at 6 per cent per annum in 1976-80.^{1/} The most significant feature of the Cuban model has been its structural reforms, "the expropriation of private owners of land and capital, the urban reform limiting rent payments to 10 per cent or less of income, the free and plentiful supply of educational and health services - this all amounted to a radical income distribution "in favour of lower-income groups largely at the expense of rural and urban landlords, of some businesses and dividend receivers, and of some holders of government sinecures". Together with the use of comprehensive rationing, "the worst of poverty and deprivation was eliminated, everybody being granted a consumption basket large enough to fulfil his basic needs". In turn, however, rationing and repressed inflation adversely affected labour productivity and absenteeism among workers, necessitating a return to material incentives and the consequent stratification of purchasing power and privileges in Cuban society.

205. This three-fold categorisation of Latin American industrialisation models bears a superficial resemblance to the three styles of industrialisation outlined in chapter 4.^{2/} "International integration" appears to correspond to style A and the Cuban model to style C, with "regional integration" favouring some of the nationalist features of style B.

^{1/} Brazil.

^{2/} See paragraphs 113-164 above.

Nevertheless, the complexities of actual historical growth are better illustrated by the more detailed analysis of Brazilian industrialisation provided by the case study.^{1/}

5.3.3 The Pattern of Industrial Evolution and its Impact on Development

206. Particular options have been taken in defined periods, as responses that have to a large extent been governed by changing international circumstances - which may appear surprising given the huge size and breadth of national resources available. In the post-World War II period, Brazilian industrial growth has been characterised in the following words: "During the past three decades, the Brazilian economy, with heavy contributions of foreign capital and increasing economic participation of the public sector, experienced one of the most rapid and extensive transformations of productive structure ever seen in semi-industrialised countries living under so-called market-economy regimes."^{2/} Structural changes may be seen from the following table.^{3/}

GDP by economic activity (percentages)

	<u>1920</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1976</u>
Agriculture and related activities	22.9	23.4	21.4	16.8	13.4	10.0	7.7
Mining and quarrying	0.6	0.4	0.5	0.3	0.5	0.9	1.0
Manufacturing	12.1	12.1	15.0	23.3	26.3	28.3	29.9
Construction	...	...	7.5	9.2	8.3	5.8	6.4
Transport and communications	2.7	3.2	3.6	4.5	5.3	5.8	6.0
Trade and finance	21.4	20.0	20.0	22.0	20.6	20.7	20.6
Other services	...	...	...	...	...	28.5	...

Annual growth rates (in per cent)

	<u>1920/30</u>	<u>1930/40</u>	<u>1940/50</u>	<u>1950/60</u>	<u>1960/70</u>	<u>1970/76</u>
GDP	2.56	3.51	4.36	6.80	6.00	10.5
Manufacturing	2.52	5.47	8.95	11.15	6.81	11.5

207. Growth has followed a strongly cyclical pattern, with the periods 1947-52, 1956-61 and 1968-74 characterised by rapid economic upswings and the periods 1952-56, 1961-67 and 1974- (?) by a marked slowdown of growth rates, the peaks showing in 1952, 1961 and 1974. The best periods of manufacturing growth were those of 1947-52 and 1968-74, particularly the latter when manufacturing increased at 12% per cent per year, GDP grew at an average rate of nearly 10 per cent in real terms, the normally high inflation rate was declining and reserves accumulated from \$ 425 million to \$ 6.4 billion (however, foreign debt also

^{1/} Brazil.

^{2/} P.S. Malan and R. Bonelli, *The Brazilian Economy in the Seventies: Old and New Developments*, World Development, 1977, Vol. 5, Nos. 1/2.

^{3/} Brazil, Appendix table 8.

grew simultaneously from \$ 3.3 billion to \$ 12.6 billion). In the latter period, Brazilian exports increased at a rate of 24.8 per cent per year, representing more than a five-fold rise from \$ 1.1 billion in 1967 to \$ 8.7 billion in 1975. As a share of GNP, exports increased from 5 per cent to 8 per cent.

208. As industrialisation took place, the tendency to regional concentration of incomes increased, although industries had been established at the same time in most regions. As late as 1910, the number of textile workers was as large in the Northeast as in Sao Paulo, but after the First World War the process of concentration accelerated. From 1920 to 1950 the share of industrial workers in Sao Paulo rose from 29 to 39 per cent, and the region's share of industrial output grew from 27.8 per cent in 1949 to 57.0 per cent in 1970, while the Northeast's share declined to 5.8 per cent. This had a corresponding effect on regional disparities of income (already in 1955, per capita income in the Sao Paulo region was nearly five times as high as in the Northeast).^{1/} With one third of the national population, the Northeast now has only 14 per cent of income.

209. Within the manufacturing sectors, the structure has also undergone major changes in the past thirty years, with non-durable consumer goods yielding their share to durable consumer goods and capital goods.

	<u>Consumer Goods</u>		<u>Intermediate</u>	<u>Capital</u>	<u>Total</u>
	<u>Non-durable</u>	<u>Durable</u>	<u>Goods</u>	<u>Goods</u>	
1949	65.2	4.5	26.2	4.1	100.0
1966	39.4	12.5	36.8	11.3	100.0
1975	30.6	21.2	34.0	14.2	100.0

210. Import substitution of intermediate and capital goods started after 1945 with a large injection of public capital and the acquisition of foreign technologies in the areas of metal goods, electrical materials and paper as well as transport equipment. The notable feature of industrialisation in Brazil since 1959 has been the steep growth of consumer durables, the manufacture of which has acted as the "leading edge" of industrial development. In this shift, the key agents have been the TNCs, with their dominant influence in transport equipment, electrical machinery and appliances, mechanical industry and rubber. (The share of assets owned by foreign sources of the 5013 largest enterprises in Brazil in 1974 in these four branches was 63, 61, 46 and 61 per cent, respectively, against an average 29 per cent for all manufacturing enterprises.) In the two other fast-growing branches of chemicals and non-metallic mineral products, the state concern Petrobras and the loans provided by the National Housing Bank for construction activities provided a critical impetus. Foreign capital also monopolises the tobacco industry and has a large participation in the fastest growing food industries.

^{1/} Furtado, op.cit.. p. 265.

211. It is above all the technological dynamism and market dominance of the branches controlled by TNCs that gives them their significance as controlling agents of the Brazilian industrialisation process. "This especially occurs when domestic firms expand passively in response to the growth of the market where they do business, and the government 'pragmatically' adapts its policies, infrastructure investment and the country savings potential to the growth needs of the leading privately-controlled sectors. ... The extraordinary growth of the foreign-owned car industry, which stimulated the expansion of private Brazilian and foreign firms producing spare parts and metallic products, determined the rhythm of oil imports, refinery construction and road building, conditioned the style of urban planning, and channelled a large share of private savings for its own sales financing needs, is an example."^{1/} Both the skewness of income distribution and the "international demonstration effect" on the consumption habits of low-income households have helped to provide lucrative markets for the consumer durables produced by the TNCs. The import requirements of this type of industrial growth have also proved very high: the share of imports in total domestic industrial supply increased from 7.8 per cent in 1965 to 15.2 per cent in 1972 and 17.3 per cent in 1974.

212. Already by 1962, the state played a controlling role in the national economy. Public sector expenditures had risen from 20 per cent of GDP to 27 per cent in the seven years 1955-62, and the share of public sector gross investment in total capital formation increased from 25 per cent to 39 per cent in the same period. This growth was accompanied, however, by a quintupling of the budget deficit to 5 per cent of GDP, so that post-1964 policies emphasised administrative decentralisation, efficiency and profit-making for public enterprises, making heavy use of financial holding companies such as Siderbras, Electrobras and Telebras. In 1974, 19 out of the largest 20 and 45 of the largest 100 Brazilian corporations were state-owned (three quarters of the latter in public utilities). Their proportion of the total net assets of the 100 largest corporations was 74 per cent and their share of total profits 63 per cent.^{2/} This growth of state enterprises was accomplished through their access to government-controlled financial institutions, compulsory loans and earmarked taxes, although their basic function is decidedly that of supporting private enterprise and TNC investments for exports as well as domestic markets. Nevertheless, the sheer growth and dynamism of the public corporations has given them the leverage to exercise a more independent role, particularly in post-1974 conditions of more unfavourable international markets and capital supplies.

213. Recent studies indicate that some of the credit for the 1968-73 boom in the Brazilian economy should go to exceptionally favourable external conditions: world trade growing at 18 per cent a year, and a huge expansion of international liquidity, with world reserves increasing nearly 23 per cent annually from 1969 to 1974. Currency loans went up from 20 per cent of total debt in 1967 to 62.4 per cent in 1973. "The revival of international

^{1/} E.L. Pacha, Issues and Evidence on Recent Brazilian Economic Growth, World Development, 1977, Vol. 5, Nos. 1/2.

^{2/} Ibid, p. 58.

trade and investment in the 1960s, through benefiting essentially the more advanced economies, spilled over to the periphery of the system: countries whose exportable production was complementary to the centre, and semi-industrialised countries with relatively high levels of per capita income, relatively cheap labour supplies, relatively 'sound and stable' economic policies, and large, growing and protected domestic markets."^{1/} These world conditions were taken advantage of by legislation favourable to foreign investment, and a system of incentives encouraging sales abroad, at a time when the terms of trade improved by 20 per cent from 1967-73 (and Brazilian exports increased at an average annual rate of 24.8 per cent). This allowed a very high rate of capital accumulation, with capital goods imports rising from 26 per cent of total imports in 1965-66 to 41 per cent in 1971-72 at the same time as domestic capital goods production was growing at 20.5 per cent a year. However, consumption expenditures were also allowed to rise very fast during the same period by recourse to massive foreign borrowing.

214. Government policies during this peak period of Brazilian industrialisation (1968-73) combined expansionist fiscal and monetary policies to stimulate capital accumulation and aggregate demand along with severe wage repression (particularly between 1964-67) and direct price controls. Loans to the private sector rose at an average annual rate of 50 per cent in nominal terms from 1966 to 1975, or 1.7 times greater than the money supply at the end of the period. The country was thus able to make use of substantial idle capacity in manufacturing industries (in 1965 and again in 1967, the degree of utilised capacity was in the order of three fourths what it had been in 1961, or what it would again be in 1972/73).^{2/} Credit expansion and family indebtedness was favoured for the purchase of durable consumer goods whose production rose by 21 per cent annually, as were the offers of easy credit terms for financing and acquiring residential construction (construction was also stimulated by the public investment boom). Finally, export incentives of various kinds (credit, taxes, mini-devaluations) made them into a prime source of industrial growth (estimates show that the part of the industrial growth rate explained by the increase of manufactured exports rose from 5 per cent in 1969 to 18 per cent in 1971). These higher export earnings, added to the massive inflow of foreign resources through the Eurodollar market, were associated with tax and credit incentives to purchase capital goods abroad. Such policies reinforced the natural tendency of foreign affiliates to spend more on equipment imports, and the easy availability of supplier credits for imports resulted in a doubling of the share of imported capital goods in total supply between 1965 and 1975. The drastic change in the external environment after 1974 has brought these policies into question once again.

215. Singer has divided the process of industrialisation into three stages spanning 1930-1955, 1955-1968 and 1968- (?), the first of these being an "easy" stage of import-substitution in non-durable consumer goods undertaken by Brazilian entrepreneurs. This

^{1/} Malan and Bonelli, op.cit., p. 23.

^{2/} Ibid, p. 22.

was followed by a "difficult" import-substitution stage involving consumer durables, intermediate and capital goods and dominated by foreign and state capital. It came to a halt in 1967 beset by problems of runaway inflation and growing deficits in the balance of payments, and was succeeded by a third, on-going stage of export promotion. Once again, the reappearance of external payments problems in 1974 might force a new stage of import substitution in capital goods. In relation to the three styles of industrialisation discussed earlier, the first two stages corresponded fairly closely to style B while the third stage took on many of the features of style A while retaining aspects such as "an emphasis on strategic industries deemed important for national independence and security."^{1/} The present structure of industry remains highly protected for domestic markets of manufactures, while it is also dependent on foreign markets, finance and technology for its continued growth. Signs of protection against Brazilian manufactured exports have appeared in ICs, and the response may be a combination of greater inward-orientation and an orientation of exports to other DCs (DCs increased their share of Brazilian exports from 31.5 per cent in 1973 to 38.6 per cent in 1977).

216. External agents of Brazilian industrialisation have shifted from governmental to private in the past decade, with TNCs taking the lead (increasingly in joint ventures with the state) as suppliers of technology. "One must conclude that presently more than half of all technology transfer to Brazilian manufacturing must be handled, at both ends, by TNCs." Imports of technology have always taken place in the industrialisation process but, during the first stage (1930-1955), the management and control were by Brazilians who assimilated and adapted the new technologies through "learning by doing" and a large technological infrastructure was created in the economy. In the TNC-dominated stage, acquisition was a much more passive process with very little local R + D. "So it happens that just when the number of Brazilian scientists and technicians is growing and the human and institutional resources for significant import substitution of technology are available, the overwhelming presence of TNCs in the industrial scene practically impedes the local production of technology."^{2/} Resistance to this dependency, now growing among the influential community of scientific and technical cadres, and among a scientifically trained military that actively promotes the local production of modern armaments, is causing a change of government policies and greater vigilance over technology contracts.

217. The sources of co-operation have throughout been the developed market economies, with some diversification away from the US (about one third of total DFI in Brazil) to West Germany, Switzerland and Japan. The DMFs also account for the majority of trade, although countries of the Middle East and within Latin America have been increasing their share in the 1970s. Exports of industrial technology and finance to other DCs have also been a recent phenomenon.

^{1/} Brazil.

^{2/} Ibid.

218. The impact of industrialisation on local innovation has been, in sum, quite negative. Before 1955, domestic small-scale producers of capital goods, particularly for the traditional industries of textiles and footwear, were protected from imports, and many units that had started as repair shops "developed into real factories, producing a whole range of machines for manufacturing, transport and agriculture. Several of them were 'modernised' by their owners ... and the Instituto de Pesquisas Tecnológicas (IPT) of the Escola Politécnica in Sao Paulo gave valuable support to this 'modernisation' effort during the 1930s and 1940s. ... This helped to create a capital goods structure where even in 1970, private Brazilian-owned enterprises accounted for 35.7 per cent of the output of all leading enterprises of this sector."^{1/} Change in the nature of demand, for much more sophisticated capital goods, came with the change in pattern of Brazilian industrialisation in the 1960s and 1970s, causing firms to use foreign licenses and patents. The high level of capital and risks associated with modern technology are proving too costly for the indigenous entrepreneurs. Moreover, at present, the only channel for manifesting demands for new technologies is the market "where the needs of the high-income group predominate. These needs are very similar to those of populations of industrialised countries, so that imported technologies are quite adequate for their fulfilment."

219. The costs of Brazilian funding policies for industrialisation have to be measured not only in terms of inhibiting the expansion of domestic capital goods industries and denationalisation, but also in terms of sharply rising external indebtedness and consequent vulnerability of the economy to external agents and "shocks". From \$ 5.3 billion in 1970, the foreign debt rose to \$ 34.6 billion in 1978 (while currency reserves increased from \$ 1.2 billion to \$ 8.9 billion). "In 1977, interest payments ate up 18 per cent and amortisations ate 29.6 per cent of all income from exports of goods and services."^{2/} Domestic growth is likely to slow down considerably as import priority is given to current inputs, and insufficient foreign exchange is available to finance the imported capital goods needs of new projects. In 1978, the debt amounted to 4.3 times the accumulated inflow of direct investments and 5.8 times that part of the inflow that went to manufacturing.

220. Capital concentration in Brazil has been relatively high: the four largest enterprises (defined as leading enterprises) have accounted for 35-38 per cent of total manufacturing output (1970-1973). Concentration is particularly large in the production of consumer durables (45-47 per cent),^{3/} and appears to be more marked in the case of newer industries, mainly state enterprises and TNC affiliates. The latter account for nearly one fifth of total manufacturing output, while state-owned enterprises account for one third of the output of leading enterprises. Even in the production of non-durable consumer goods, TNCs have been increasing their participation through the launching of new products while the state-owned enterprises appear to dominate intermediate goods production.

^{1/} Brazil.

^{2/} Ibid.

^{3/} Ibid., Appendix tables 18, 19 and 20.

221. The relationship between industrialisation and poverty in Brazil is not clear. What can be said is that "wage repression combined with 'corrective inflation' until 1967, and with economic recovery thereafter, is a main factor behind the deterioration in income distribution and the increase in infant mortality rates observed in the period."^{1/} In the 1960s, the real wages of unskilled labour fell while skill differentials widened and the top positions in both government and private firms were the main beneficiaries. In 1975, the earnings of the general manager in a middle or large enterprise in Sao Paulo or Rio de Janeiro were 144 times that of the labourer (up from 65 times in 1969) and 162 times in the case of a foreign executive.^{2/} The distribution of incomes has consequently tended to become increasingly concentrated: from 1960 to 1976, the share of the poorest 50 per cent of the economically active population in total personal income fell from 17.7 per cent to 11.8 per cent, while that of the richest five per cent increased from 27.7 per cent to 39.0 per cent. Real incomes of the poorest rose an estimated 15.5 per cent in 1960-70 and 65.6 per cent in 1970-76 (the latter figure is an overestimation by including non-monetary incomes) while those of the richest grew 75.4 per cent and 133.7 per cent, respectively. Calorie-protein deficiencies in food consumption and infant mortality rates have also risen in the cities: during the 1960s, nutrition levels of low and middle-income families in Sao Paulo have been seen to decline while infant mortality "grew in the 1960s in all state capitals for which acceptable data are available." At the same time, it may be recognised that income distribution in most countries tends to worsen in the initial stages of industrialisation as own-account workers are transformed into unskilled wage-labour and "informal" employment tends to predominate in the cities. Gradual dwindling of labour reserves and organised trade-union and political action by the workers is likely to reduce income differentials in the later stages, as may be observed already in Brazil (the impact of the 1978 strikes).^{3/} Furthermore, industrialisation has been responsible for a sizable proportion of the increase in urban employment from 4.93 million in 1940 to 16.47 million in 1970.

222. Finally, industrialisation has had a deep impact on consumption habits in Brazil through the "demonstration effect" of new products and vigorous advertising campaigns by TNC affiliates, particularly through television (more than 10 million sets in 1975, up from 170 thousand in 1955).

^{1/} Bacha, op.cit., p. 48.

^{2/} Brazil.

^{3/} Ibid.

5.3.4 Future Orientations in Industrialisation and Their Implications for International Co-operation

223. It was indicated earlier that there are signs of a change in industrialisation policies by the government in response to altered international economic conditions. It appears to be widely believed that a more "inward-looking" strategy is a precondition for maintaining high GDP growth rates in the near future. "Domestic and international conditions after 1974 are such that growth can only proceed through a programme of import substitution in capital goods and basic industrial inputs (such as ferrous and non-ferrous metals, fertilizers, petrochemicals and pulp and paper) based on expanded sources of energy. The same conditions impose restrictions on further growth of import-intensive consumer durables, such as automobiles, which were on the centre of the stage in the 1968-73 economic boom. As a consequence, state enterprises, such as Electrobras, Petrobras, Siderbras, Baledo Rio Doce and their subsidiaries tend to assume a leading role in the economy. On the other hand, foreign corporations, such as Volkswagen, Ford, Pirelli, GM, Phillips, G.E. and Goodyear, have a less important role to play."^{1/}

224. The case study looks at the choices as ones between inward-oriented or outward-oriented strategies, or strategies favouring a "social prioritier" trend. Whereas further international integration is likely to suffer from world recessionary tendencies since the mid-1970s, and the more cautious investment attitude of TNCs, the inward-looking option may not provide the required quantum of external finance for imports on which Brazilian industrialisation has come to depend (consumer goods accounting for only 10 per cent of total imports). An outward orientation would require further expansion of foreign debt, greater incentives to export and foreign investment, and currency devaluation, whereas an inward-orientation would require greater state control over foreign loans and joint ventures. Social priorities-orientation requires state control over financial operations and very limited foreign direct investment in technology-intensive sectors. These correspond fairly closely to the three styles of industrialisation discussed in chapter 4 above. Whatever the option exercised, the study sees no alternative to continued reliance on technology acquisition and finance from the ICs, although greater reliance on DCs for markets and finance may be desirable. "Occupying an intermediary position in the international division of labour moulded by the TNCs, Brazil is increasingly playing the role of transmission gear of technology and capital transfer towards other less developed countries."^{2/} It is difficult, however, for Brazil to co-operate with any readily identifiable group of DCs in terms of putting forward common interests in international negotiating fora.

225. The reinforcement of a style A industrialisation pattern in the future would also reinforce existing trends such as income concentration of economic power in the hands of TNCs. Style B would probably require limited income redistribution in order to widen

1/ Bacha, op.cit., p. 58.

2/ Brazil.

domestic markets, and the ownership of industry would favour local state or private capital rather than external sources. Style C would signify, in contrast, a profound redistribution of income, while power would be exercised by elected state officials in a centralised fashion. External co-operation has adapted its mechanisms in Brazil to the existing social and production structure; it is also likely to make drastic changes in that structure difficult to accomplish, since the present sources of external finance, technology and markets are not likely to favourably view the adoption of a new set of policies that aim "to alter the balance of economic power in favour of local capital, or submitting local subsidiaries of TNCs to state control".^{1/} As a general recommendation, mechanisms of external co-operation are required that are not dominated by one single set of interests so that "the freedom of each country to choose its own path of industrialisation could be preserved."

226. Specific recommendations fall into the four areas of finance, DFI, technology and trade.^{2/} In finance, it is suggested that an international banking net be established to help trading and financial agreements, tying loans to commercial contracts that specify debt repayment in kind, in terms of exports (thereby limiting financial liabilities to the trading possibilities of each country). The unification of bargaining conditions among countries competing for DFI is seen as desirable, through a supervisory international organisation. Technology development through much greater local R + D is regarded as the main problem for Brazil, and the pooling of funds by a number of countries in promising branches is suggested as an alternative to TNCs. The first step is a centre for the collection and exchange of relevant technological information, starting with activities focussed on basic needs satisfaction. If the financial and technological instruments can be combined, trading possibilities among Third World countries would become more attractive, preferably on the basis of common plans of industrialisation for several countries.

227. The desirable shape of international co-operation for the country naturally depends on the future pattern of Brazil's industrialisation. The study indicates that increased co-operation would be possible with the whole spectrum of countries, both ICs and DCs, if the appropriate industrialisation model for the country could be followed with "a set of priorities that combines a vastly expanded output of basic goods and services with a selected amount of front-line activities, from artistic creation and pure science to higher education, technological research and the production of 'cultural goods'. Such a model should not envisage self-sufficiency in a world where interdependency is growing in all fields and for all countries, but to improve the position of Brazil as a participant of the international division of productive as well as intellectual labour."^{3/}

^{1/} Brazil.

^{2/} Ibid.

^{3/} Ibid.

5.4 India

5.4.1 The Beginnings of Modern Industrialisation

228. In the centuries preceeding the Industrial Revolution in Britain, India's industries had developed as far as those of any other country in the world. Output from her millions of 'own-account' workers had made her manufactured exports famous in international markets, and the country was endowed with an impressive array of industrial skills and enterpreneurship that gave her a significant advantage in growth potential over most other developing countries. In fact, in her foreign trade, India was primarily an exporter of manufactured products and an importer of primary goods. Specifically, in comparison with Trinidad and Tobago and Brazil, India's starting position for 'modern post World War II' industrialisation appeared quite impressive.

229. Much has been written about the 'de-industrialisation' of colonial India. Estimates indicate that about 25% of the working population at the beginning of the nineteenth century were employed in industry and handicrafts; in 1881, the proportion had fallen to between 16 and 18%. From 1815 to 1832, India's cotton exports fell by 92% to be replaced by British imports so that in 1850 one quarter of Britain's cotton exports went to India.^{1/} The construction of a railway system and the influence of British private investment in industry in the second half of the century (to make use of India's cheap labour in response to competition from German, American and Japanese exports) helped to encourage the beginnings of local factory production. Although the first cotton textile and jute mills were established in the 1850s, at the time of independence a century later, modern large-scale industry (together with mining) accounted for only 7% of national income and 2.5% of the total workforce (1949, 1951). In contrast, small industrial enterprises that were 'traditional' in organisation and techniques of production accounted for 7% of the work force and 10% of national income. Agro-based industries - cotton, jute, tea and sugar cane - were the four largest, together making up 52% of the net value of industrial output in 1949 while the engineering, electrical, metallurgical and chemical industries together totalled only 13.6%.

230. Modern industrialisation was again export-led: the growth of the two main industries, cotton and jute, depended on international economic conditions, when boom periods helped to stimulate exports as well as domestic incomes and the domestic market: at the same time, public revenues and expenditure also increased, with concomitant encouragement of the home market for industrial goods. This was the experience between 1900 and 1914, when India faced favourable terms of trade and expanding markets for her exports, and industrial production grew at an annual rate of 4.8%, but then declined to only 1.5% in

^{1/} From census data after 1881, quoted in C. Bettelheim, *India Independent*, Mac Gibbon and Kee Ltd., 1968.

the period after the first World War and the Great Depression with the shrinking of world markets. During the depression years, domestic industry gained from protection and import substitution (sugar, paper, cotton textiles) but the home market itself suffered from stagnant world economic conditions. It was not until the second World War that industrial profits were stimulated again, and the large accumulation of sterling reserves through inflationary forced savings provided a new potential for industrial investment. Production for Britain's war effort in the two World Wars of the twentieth century stimulated the growth of heavy industry, particularly steel, while protection from tariffs gained favour after 1921 with the appointment of the First Indian Fiscal Commission (defence outlays fuelled the 200% real increase in public expenditures during the World War II).^{1/}

231. Indigenous entrepreneurship led the growth of the cotton textile industry for the domestic market, while British capital and enterprise were found in mainly plantation and mining activities, which were dependent on external trading interests. Import-substituting motives were similarly responsible for Indian entrepreneurs engaging in steel-making (with the erection of the first steel plant at Jamshedpur in 1911). Three communities provided most of the domestic industrial entrepreneurs: the Parsis, Gujaratis and Marwaris, the first two emerging from trading into manufacture while the third started primarily with money-lending activities. Initiative and leadership gradually passed into Indian heads after the mid-1930s, mostly through the instrument of managing agencies (a form of commercial organisation that combined the supply of capital, know-how and management without necessarily controlling equity) which often integrated their activities vertically within their own concerns, from raw material sourcing to services and markets. The house of Birlas, for instance, in 1939 was engaged in cotton, rayon and jute industries as well as in the manufacture of textile machinery. Empires straddling several industries were formed, out of "the tendency for entrepreneurial classes to spring from certain business communities and the close caste and kinship network which characterises these classes, as is evident even today."^{2/} The nature of Indian entrepreneurial growth from trading and money-lending origins may have oriented their future development in favour of quick gain rather than long-term profit maximisation, sales and financial rather than production expertise, and a lack of interest in systematic research and technological development.

232. Although by 1948, the share of commercial and industrial undertakings in total foreign investment had risen to 55% (replacing plantations as the major area of interest), the total external investment itself went down drastically from 1939 to 1948 (from Rs 1500 crores to Rs 320 crores) and British control declined from over 40% of the gross value of industrial assets in 1914 to about 3.5% in 1950. These changes took place at a time when the country had reached self-efficiency in the production of cotton cloth, sugar and matches, produced most of its cement consumption, half its paper consumption and three quarters of its steel demands.^{3/}

^{1/} J. N. Bhagwati and P. Desai, India, Planning for Industrialisation, OECD, O.U.P., 1970, p. 35.

^{2/} N. N. Ghagwati and P. Desai, op.cit., p. 48.

^{3/} India.

5.4.2 The Pattern of Industrial Evolution and its Impact on Development

233. Rapid industrialisation through planned investment was seen as the principal avenue for overcoming poverty and under development by the Indian government after independence: "Planning in India proceeded on the basis that there were no inherent constraints to India achieving, in time, a diversified productive structure similar to that of the industrialised countries. A sub-continental economy, with substantial endowments of natural resources, a population having a long cultural history and the capability to acquire new skills, evidence of entrepreneurial ability, and above all political maturity: these, it was felt, satisfied the pre-conditions for economy-wide development, with industry as the leading sector... But if industrialisation is to be rapid enough, the country must aim at developing basic industries which make machines to make machines needed for further development. This calls for substantial expansion in iron and steel, non-ferrous metals, coal, cement, heavy chemicals and other industries of basic importance. The policies and instruments of control required to achieve the desired industrial structure were developed early in the period of planning and have been little modified over the years. Key areas have been reserved for direct investment by the public sector. Priorities have been established in other areas by a system of administrative controls, with limited reliance on the price mechanism, fiscal incentives and subsidies. The structure of protection, too, has been based on quantitative import restrictions rather than on tariffs."^{1/}

234. The conceptual basis for India's industrialisation strategy was laid out explicitly in the second Five-Year Plan (1955-60) developed by P. C. Mahalanobis, which in turn derived its inspiration from earlier Soviet models developed by G. S. Feldman. It emphasised a strategy for growth based on the role of capital goods industries in maximising domestic savings and reinvestment (rather than labour mobilisation which would divert resources away from investment into wage payments and consumption). Poverty would be alleviated through the high growth of national product expected from the strategy. The bulk of resources would go into capital-intensive, large-scale, steel and machine-building plants. Employment would be taken up by parallel policies (of secondary importance) for developing agriculture and cottage industries, given the assumption at that time that India's prospects for the growth of agriculture and exports were poor. Rather than working backwards through import substitution from domestic demand for consumer goods into capital goods production, the plan was to immediately establish a few large-scale capital goods industries under central direction and later move forward into the production of consumer goods. Foreign aid would be used to cover the exchange gap created by the need associated with the strategy to import capital goods in the first stages.

^{1/} India.

255. The implementation of this strategy was left to a complex series of policy instruments starting with the Industrial Policy Resolution of 1948 (subsequently amended in 1956) and declarations of intent regarding the use of DFI and external resource use. The most outstanding feature was the primary dependence on a system of industrial licensing (the Industries Development and Regulation Act of 1951) to plan the establishment of new industries. The three main objectives promoted by the licensing system were to effect a wide regional distribution of industry, exercise a curb on monopoly control by a few large concerns by encouraging competition and stimulating small enterprise, and influencing the distribution of private industrial investment into sectors accorded a high priority in national plans. In addition, direct state intervention through a growing industrial public sector, and a very high degree of control over institutional lending to industry, gave the Indian government marked powers in determining the future pattern of industrial growth. These were accompanied by a number of other regulatory instruments including control over capital issues in the corporate sector, direct controls in the form of domestic and imported raw material allocations to priority industries, administered prices for selected industrial inputs (such as petroleum products, coal, steel and cement in recent years), and the channeling of foreign exchange resources into the import of capital goods.

236. 'Phased manufacturing programmes' have attempted to encourage local technological capacity through stipulations made during the registration of agreements for foreign technical collaboration and the acquisition of industrial licenses from abroad. A case-by-case scrutiny of each agreement was to be carried out, according to which the value of imported components was expected to decline over the period of the agreement and process know-how effectively transmitted to the Indian licensee.^{1/} In 1969, an Indian Monopolies and Restrictive Trade Practices Act was passed and a Commission established, in order to control abuses resulting from the concentration of economic power, monopolistic practices and restrictive business practices.^{2/} In the same year, the passage of the Foreign Exchange Regulation (Amendment) Act (FERA) promised a stricter application of the Prime Minister's statement on Private Foreign Investment of April 1948, which had attempted to ensure Indian majority ownership and indigenisation of personnel. FERA was brought into play to restrict foreign exchange outflows but also "laid down conditions under which foreign shareholders in existing foreign-controlled companies had to reduce their holdings within a definite time period."^{3/} In the case of trading companies and non-priority industries, the proportion is to be reduced to 74%, while for priority industries, foreign shareholdings cannot exceed 51%.

^{1/} India.

^{2/} For an assessment of its workings, see report by H. K. Paranjape, Control in India of Restrictive Business Practices, UNCTAD/ST/MD/20, United Nations, 1978.

^{3/} India.

237. Between 1950 and 1976, industrial output in the country increased about five times, giving an average annual compound growth rate of 6.3%. One indication of the structural change that has taken place in the industrial sector may be seen from the following breakdown of percentage shares in MVA in the factor sector:^{1/}

<u>Industry</u>	<u>1959</u>	<u>1974/75</u>
Chemical Industries	12.23	17.12
Engineering Industries	26.06	34.32
All Other Industries	61.71	48.56

These figures clearly show the growth in importance of the 'heavy' industrial sectors at the expense of final assembly and consumer goods production, bearing out in part the objectives of the planned strategy of industrialisation.

238. The growth pattern, however, needs more careful examination over the period in question.

Category of Industry (Factory enterprises)	Weights attached in index numbers with base year		Index numbers of industrial production						
	1946	1960	1947	1951	1951	1956	1961	1965	1970
			1946 = 100.0		1960 = 100.0				
Agro-based	66.55	47.60	95.6	96.9	72.5	88.2	105.9	125.9	136.8
Mineral-based	13.65	15.02	102.1	124.6	54.2	76.5	105.8	133.8	173.8
Metal-based	9.30	9.09	96.8	115.5	42.5	61.0	117.9	186.5	208.9
Chemicals and chemical-based	4.12	7.26	102.7	260.2	42.4	63.7	113.4	159.3	236.5
Machinery Manufacturing	5.58	15.43	249.2	272.3	19.9	79.1	115.2	224.9	228.7
Electricity, gas and Steam	-	5.47	-	-	35.7	58.5	116.3	190.5	334.0
<u>All industries</u>	100.0	100.0	97.2	117.2	54.8	78.4	109.1	153.8	180.7

239. With a base year of 1960, the index number of production for all industries rose in 1971 to 185.1, in 1972 to 199.4, in 1973 to 200.6 and in 1974 to 201.8. Taking 1947 as the base year, the index number for 1974 was about 433. Based on this data, the annual compound rates of growth of these various industrial categories work out as:

^{1/} India.

^{2/} Taken from Commerce, Bombay, August 13, 1977, p. 9.

Industry category	1947-51	1951-56	1956-61	1961-65	1965-70	1970-74
Agro-based	0.3	4.0	3.8	4.4	1.7	...
Mineral-based	5.1	7.2	7.7	7.0	4.6	...
Metal-based	4.5	7.5	14.1	12.2	2.3	...
Chemicals and Chemical-based	26.2	8.5	12.2	7.9	9.0	...
Machinery Manufacturing	2.2	32.1	7.8	18.2	0.3	...
Electricity, gas and steam	-	10.4	14.7	13.2	11.9	...
<u>All industries</u>	4.8	7.4	6.8	8.9	3.3	2.8

240. In a different classification of industries according to machine manufacturing, intermediate and consumer goods, the changing structure and corresponding growth rates of different categories may be shown as follows for the period 1961-1974:^{1/}

Industrial category	Weights attached in index numbers	Index numbers of industrial production (1960 = 100.0)			
		1961	1965	1971	1974 (Jan-July)
A. Machinery and equipment manufacturing	11.76	118.0	244.0	224.3	226.3
B. Basic intermediate goods industries					
(a) Metals and minerals	17.69	111.0	154.1	180.5	189.9
(b) Chemicals	1.15	128.4	229.2	549.3	637.9
(c) Electricity	5.37	116.3	190.9	358.5	405.8
C. Other intermediate goods industries	25.88	105.8	140.2	160.4	177.7
D. Consumer goods industries					
(a) Non-durable	31.57	105.8	120.5	140.2	144.1
(b) Durable	5.68	110.8	166.5	268.0	273.6
<u>All industries</u>	100.0	109.2	153.8	186.1	201.8

1/ All four tables are taken from K. N. Raj, Growth and Stagnation in Indian Industrial Development, Mainstream, February 26, 1976. Appendix.

Industrial category	Annual compound rates of growth (in percentage)			
	1961-65	1965-71	1971-74	1965-74
A. Machinery and equipment manufacturing	19.9	1.4	5.9	6.9
B. Basic intermediate goods industries				
(a) Metals and minerals	8.5	2.7	1.7	2.3
(b) Chemicals	15.9	15.7	5.1	12.0
(c) Electricity	13.2	11.1	4.2	8.7
C. Other intermediate goods industries	7.3	2.3	3.5	2.7
D. Consumer goods industries				
(a) Non-durable	3.3	2.5	0.9	2.0
(b) Durable	10.7	8.2	0.7	5.7
<u>All industries</u>	8.9	3.2	2.8	3.0

241. The figures show that there has been a rather dramatic decline in industrial growth since the mid-1960s. Compared with the decade 1955-65, when total industrial production increased at an average annual rate of 7.8% and manufacturing output at 7.6%, in the following decade 1965-75, the rates were more than halved, to 3.6% and 3.1% respectively. Barring the record performance in 1976 (a 10% rise in industrial production) which may be attributable to special factors such as a deliberate policy of building up stocks, this deceleration in industrial growth may be noted in all the major branches of industrial activity. Capital goods industries, in fact, suffered the largest declines while the basic industries category of intermediate goods fared a little better. Consumer goods industries, whose growth rates remained consistently below the average for the industrial sector, were buoyed up for a while in the 1960s through the rapid increase in output of consumer durables: this too fell off sharply in the 1970s. The performance of small-scale industries, accounting for about 15% of total industrial output, is much more difficult to assess because of the paucity of data, but probably followed that of the factory sector as a result of its close links with it.

242. The stages through which India's industrial development has passed in the past three decades may be summarised as follows: "In the years following independence, infra-structural developments and import substitution in the consumer goods sector stimulated industrial production. After that phase, in the late 1950s and early 1960s, the high rate of industrial growth was sustained by investment in the capital goods sector and in basic intermediate goods industries. Starting around 1965, there was a marked deceleration in the rate of growth, which led to a near stagnation of industrial output in the early 1970s. The little growth that did take place in the period 1965-70 was largely attributable

to infrastructural basic industries and to consumer durables. However, the expansion in luxury goods industries also came to an end thereafter. The ostensible revival in 1976 was a consequence of special circumstances, and did not mean a return to the trend growth rate of earlier years."^{1/}

243. The range and sophistication of India's manufactures have grown more impressively than the pace of aggregate output, attesting to the breadth and depth of the country's technical and managerial skills, and the ability of her scientists and engineers to fully absorb a wide array of advanced technologies. Local research effort, and the drive to replace imported components with indigenous manufacture, have been particularly evident in the armaments industries, while the growth in technological capacity represented by the shift from assembly to local design and construction has been demonstrated by the burgeoning of exports in turnkey plants.

244. Export performance generally has reflected the stages through which industrialisation has passed. In the 1950s, the majority of exports was in agricultural commodities such as jute and tea which faced a slow growth of demand in world markets. Together with the emphasis on import substitution in the first two Plans, the value of exports declined at a rate of 1.2% from 1951-52 to 1960-61. Subsequently, the government provided a host of export subsidies and licensing preferences to encourage exports, and from 1960-61 to 1964-65 exports accelerated to a 6.2% rate of growth. The next five years showed the effects of drought and economic stagnation in another decline of export growth to only 1.9%, but this was followed by a very much faster rate of increase with the boom in world trade. In fact, non-traditional exports (mostly manufactures other than cotton textiles and jute manufactures) grew at very high rates from 1965 onwards (17.7% per year from 1965-66 to 1970-71 and 16.0% from 1969-70 to 1973-74), but even traditional, mainly primary, exports increased in the 1969-70 to 1973-74 period by 8.3% per year. In the commodity group for which the growth of developing country exports proved the most dynamic in the 1960s (machinery and transport equipment at 21.3% per year), India's exports rose even faster, at 26.7% annually in 1960-69. However, in the commodity group of clothing and textiles, India's exports have stagnated throughout the period 1953 to 1970, when her share of total DC exports in this category declined from 38% to only 7%. Whereas tea, cotton textiles and jute manufactures comprised 59% of India's total exports in 1951-52, the proportion declined to 24% in 1973-74, while non-traditional manufactured goods increased their share from 5% to 31%. Imports tended to follow the vagaries of agricultural performance and the massive requirements of investment in heavy industry.

1/ D. Nayyar, Industrial Growth in India: Some reflections on growth and stagnation, Economic and Political Weekly, Special Number, August 1978, Bombay.

particularly during the Second Plan period. Machinery and transport equipment imports rose by almost 50% in the period 1960-61 to 1965-66, to account for over one third of total imports. By 1973-74, they still amounted to more than one fifth of the total. In fact, while non-traditional exports were rising at 6% per year from 1969-70 to 1973-74, non-traditional imports rose much faster, at an annual rate of nearly 25%. The geographical composition of trade has also diversified considerably over this period: the UK share of India's exports declined from 29% to 9% from 1955-56 to 1972-73 while that of the East European countries including the USSR rose from less than 1% to 24%. By 1973-74, 25%, 8% and 11% of exports were directed respectively to Western Europe, Eastern Europe and the USSR, and 15% each went to North America, Japan and other Asian countries.^{1/}

245. Exports that are intensive in terms of embodied technology have been channeled in basically four forms: complete plants, joint ventures, turnkey contracts and consultancy assignments. The export of complete plants has been accomplished for items ranging from steel foundries, power stations and railway rolling stock to plants for producing cotton and jute textiles and for food processing. While the domestic production of engineering goods rose by 5.5% annually from 1970-78, the value of engineering exports rose by 27% annually, and the volume by 17.3% per year to appropriate an 11.6% share of total exports in 1978. The total number of exporters, however, remained small at only 1500 enterprises, with the 250 largest accounting for nearly 85% of the total value. Public sector undertakings were responsible for 12.6% of engineering exports; if public sector trading enterprises are added, they accounted in 1976-77 for 21.4% of total engineering exports (55.7% of total capital goods exports). Turnkey projects have been implemented for such areas as machine tool plants, coke ovens and factories producing electric motors and transformers. By 1976-77, 26% of India's capital goods industries (weighted by value of output) had reached a level where they could supply complete equipment and technology for export. In other areas, enterprises have to act together with IC partners as sub-contractors. Other developing countries are increasing their share of India's export markets. By the end of 1978, 359 joint ventures in developing countries had been undertaken, most of them in West and South-east Asia. 54% of these joint ventures operate in heavy industry, 34% in light and 7% in infrastructure projects. These shares are reversed for turnkey projects, 57% of them being in infrastructure and services, 27% in light industry and only 15% in heavy industry. As a share of consultancy contracts, heavy industry again accounts for 52%, light for 7% and infrastructure for 30%. Competition with IC enterprises, is found in turnkey and consultancy contracts more than in joint ventures, and India's comparative advantage for the former appears to remain in the fields of light industry. Overall, about 70% of India's engineering exports and 90% of her capital goods exports are now directed to other developing countries.^{2/}

^{1/} Trade figures are taken from Chapter 8 of J. Mellor, *The New Economics of Growth: A Strategy for India and the Developing World*, Cornell University Press, Ithaca, 1976.

^{2/} The data on technology-intensive exports are taken from Granovsky, "The Transfer of Technology and Sales of Capital Goods from India to Other Developing Countries", mimeo consultant paper for the Joint Study, 1979.

246. It is clear that the public sector has played the dominant role in India's industrialisation efforts. By the end of the First Plan, 46% of aggregate investment took place in the public sector (the share of the public sector in total industry and mining investment was 56%: it was also as high as 50% of investment in village and small-scale industries), rising to 54% at the end of the Second Plan. Over the period 1966-67 to 1976-77, the public sector accounted for 59% of gross fixed capital formation in industry. Industry itself accounts for the lion's share of public sector investment,^{1/} the 'basic and core industries' alone making up 79% of the total in 1974 (steel 32%; mineral and metal industries 14%; chemical and pharmaceuticals 13%; engineering 13%: and petroleum 6%). While public enterprises owned only 24% of the real net stock of capital of manufacturing enterprises in 1960-61, their share had risen to 42% by 1975-76. The share of real net product had similarly risen from 8% to 24% and of manufacturing employment from 11% to 21%.^{2/}

247. The two principle stimuli for post-independence industrialisation have been the increase in public investment, and a widespread extension of protectionism, particularly after quantitative restrictions in imports were imposed on a large scale after the 1956 foreign exchange crisis. The role of the public sector, in addition to the political objective of controlling the "commanding heights of the economy", was to cover large-scale, high-risk, lumpy capital investments that were unlikely to attract private investment at the levels intended by the planned industrialisation strategy: it was also to stimulate private investment by providing essential inputs at controlled prices and ensuring secure markets for a large proportion of its output. Finance was also made available to the private sector on a large scale through specialised financial institutions. By March 1978, state owned or controlled financing institutions had invested Rs 4420 crores in private sector industry (the largest lenders were the Industrial Development Bank, IDBI with 42%; the State Finance Corporation with 16%; the Industrial Credit and Investment Corporation, ICICI with 15%; and the Industrial Finance Corporation IFCI with 12%), amounting in 1977 to a third of the total value of privately owned industrial assets.^{3/} According to the Mahalanobis strategy, public sector enterprises and heavy industries in particular, were to provide for most of their own future expansion through a high profit rate. In practice, the public sector has done very little 'self-financing', relying instead on foreign and indirect taxation and deficit financing, and generally showing a poor record of financial returns. The worst example has been the public sector steel industry which, in 1965-66, alone absorbed 40% of all government industrial investment, and showed substantial losses throughout the 1960s. Public sector pricing policy, long construction delays and low capacity utilisation have been among the causes adduced for the disappointing financial performance of the state sector.

^{1/} Non-departmental enterprises of the central government.

^{2/} See India.

^{3/} India.

248. In the Second and Third Plans, foreign aid and borrowing from the central bank accounted for 43 and 42% respectively of the total public sector plan outlays. According to the Fourth Plan Mid-Term Appraisal, domestic savings fluctuated as a proportion of national income between 8 and 11% during the 1960s, with government and household savings increasing very slowly around proportions of about 25% and 60% respectively, but with corporate savings showing a steady decline. The role of foreign aid alone has been diminished in recent years although the period of heaviest investment in industry clearly indicates the country's dependence on external sources: from 1955-65, foreign aid amounted to 20% of total public sector plan outlays, rising to 35% over the next few years before declining to 15% in the early 1970s. Amortisation and interest payments on accumulated debt rose to 16.3% of India's total export earnings in 1966-67. Vulnerability to external pressures as a result of this dependence was sharply illustrated by the circumstances surrounding the large (57.5%) devaluation of the currency in 1966 and the abrupt withdrawal of US assistance in 1971 (although the impact of the latter was mitigated by corresponding increases in aid by the other donors).^{1/}

249. Foreign capital inflows changed their targets in India after independence from areas such as trade, finance and export-oriented activities to technology-intensive areas producing mainly for the domestic market under protection. TNCs became the principal channel operating under joint ventures in which Indian partners usually held minority shares. Over the period 1948 to 1972, foreign investment in trade and industry rose from Rs 256 crores to Rs 1750 crores, with 57% of the end period investment in industry and mining. Larger than this quantum, however, was the area of control represented by the paid-up share capital of "foreign-controlled rupee companies" (amounting to Rs 6350 crores in 1972), equivalent to 42% of the total value of paid-up shares of all companies quoted on the stock exchange.^{2/} Most of this investment was the result of retained profits rather than of fresh inflows (e.g. in 1964-72, of gross investment by foreign capital of Rs 277 crores, 65% consisted of retained earnings, and only 6% of cash inflow), and the net impact on the balance of payments after deducting royalties, technical fees, dividend flows and capital repatriation, was estimated to be negative. If the extent of foreign control is defined as the ratio between the total capital employed in foreign subsidiaries plus foreign controlled rupee companies, and the capital employed in the entire private corporate sector, the ratio stood at nearly 31% in 1965 and may have reached 40% in the early 1970s. This control is likely to have increased since foreign controlled rupee companies show higher rates of profitability and growth (14% against 10% of pre-tax profits) than the rest of the private corporate sector. The number of foreign controlled rupee companies was 480 in 1970, and the Indian subsidiaries of foreign companies totalled another 120: of the 600, 276 were British. Investments since the mid-1960s have been in priority areas such as fertilizers, pesticides, petro-chemicals, power equipment and industrial machinery.^{3/}

1/ India.

2/ India.

3/ India.

250. Technologies for industrialisation have been imported through a large number of licensing agreements, the number of technical collaboration agreements for industry totalling nearly 5500 since independence, with a current rate of approvals of 250 per year. In a Reserve Bank study covering the period 1964-70 when 1260 agreements were approved (involving 1100 private companies), it was observed that nearly half the agreements contained restrictive clauses on export rights, and 200 were to last for more than 10 years. The cost of technology through outflows was estimated at Rs 74 crores. It is, of course, not just the direct cost, but the inhibiting impact on indigenous research that has been damaging for technological self-reliance. Public sector companies in the engineering, basic metals, chemical and pharmaceutical sectors have also been observed to make liberal use of foreign licensing agreements. One factor that has acted as a powerful inducement to increase technological self-reliance has been the state's involvement in establishing an autonomous capacity for weapons production including design and development facilities, in order to meet 'the needs of national security'. 'It was seen that the requirements of equipping and modernising the army, the navy and air force to levels necessitated by continued tensions on the sub-continent would mean a high level of imports, unless domestic production facilities were established. It was also felt that India's non-aligned posture in world affairs would not be consistent with reliance on other countries for maintaining the basic supply and provisioning of her armed forces.'^{1/} Arguments have been advanced that other civilian industries benefit from arms development. 'Science-based' industries, including nuclear power generation and aerospace development, have also been justified in terms of having large spin-off effects in many industrial fields.

251. A major purpose behind the industrial licensing policies of the government, together with legislation on monopolies, social control of banks and appropriate fiscal policy, had been to prevent monopoly control and the concentration of industrial power in a few undertakings during the process of industrialisation. These policies do not appear to have been particularly successful. 'Large business houses' each continue to control a wide range of companies and a correspondingly large share of total private corporate capital: in 1967-68, the share of the 75 largest business houses (led by the Tatas and Birlas) in the assets of the entire private corporate sector (excluding banking, estimated at Rs 7500 crores) was 53.8%. Among 46,000 registered companies, 1650 large and medium companies currently account for 70% of total paid-up capital; out of these, only 400 large companies account for 90% of net worth, 70% of sales and 85% of operating profits. The large companies also show significantly larger profits than the others. Where "large industrial houses" are defined in the Indian context as industrial groups with total assets exceeding Rs 20 crores each, in 1976, out of Rs 9047 crores total assets of all 'large industrial houses', the 30 biggest among them accounted for 65% (the ten largest alone

^{1/} India.

for 40%). Between 1972 and 1976, this concentration had not changed, although the 'large industrial houses' had increased their assets as a group by 62%.^{1/}

252. Another objective in planning industrial growth through central direction was to determine the location of industry in favour of wide dispersal and equitable regional distribution. In the siting of some large-scale public enterprises, this criterion has certainly been evident, but more as a result of political pressure from the various states than out of concern with minimising social costs. Nevertheless, industry has come to be heavily concentrated in five out of the 20 states (Maharashtra alone accounting for 26% of value added), with 54% of the factories, 58% of factory employment, 61% of the value of output and 63% of value added. Moreover, industry has been concentrated within these states in a few urban agglomerations; 70% of India's districts, classified as 'industrially backward', have had virtually no success in attracting industries.^{2/} Even the new 'industrial townships', deliberately planned away from the major cities, have remained enclave with negligible linkages with the surrounding rural population.

253. A third problem that has preoccupied Indian planners conscious of the poor employment implications of her capital-intensive, heavy industry strategy of growth, has been to identify ways of promoting a parallel development of small-scale and rural-based industries. By reserving areas of production for the small-scale sector through industrial licensing, imposing differential excise duties, and preferential cred. and subsidies, and establishing design, research and service centres,^{3/} the government hoped to provide adequate stimulus to allow small units to compete successfully with large-scale factory production. In fact in 1975-76, out of 72,000 factories in operation, 47% were very small-scale (less than 20 employees). Together they accounted for only 6.5% of total fixed capital in the factory sector, but employed 32% of total workers and provided 22% of total output. Fixed capital per employee in the large-scale sector worked out thirteen times as high as requirements for the very small sector, and five times that of the small-scale sector. Where small-scale industry is defined as units with less than 10 workers working with power, or less than 20 workers working without power, in 1968-69, three quarters of the 8.57 million so employed were found in rural areas, in a very wide range of sectors.^{4/} Household or artisanal-level production, usually of basic necessities such as handloom cloth, edible oil, simple agricultural implements, earthen pottery and footwear continues to survive factory competition, and is of even greater importance to the lowest-income groups of the Indian population. The general experience with the growth of small-scale industry in India, however, has not been favourable: in the competition for public outlays, the

^{1/} India.

^{2/} Commerce, op.cit., p. 8.

^{3/} India.

^{4/} See R. Kaplinsky. Small-scale Industry Development in Kenya, consultant paper for the Joint Study, table 7.

small-scale sector has invariably suffered, affected as well by the general lack of demand for consumer goods, the shortage of raw materials, and insufficient investment in infrastructure (particularly transport and rural electrification). Public policies have been much more attuned to the needs of large-scale industry (credit for fixed rather than working capital, access to imported machinery). The most efficient size of enterprise in the small-scale sector has been the unit intermediate between the 'tiny' household sector and the 'medium-scale' firms at the Lower end of registered industry, which nevertheless utilise little capital per worker, increase their labour-intensity as a result of low wage payments, are able to attract additional savings and entrepreneurship, and are well adapted to the conditions and markets of small rural towns. These have grown most rapidly in areas such as the Punjab where rural incomes have risen following the introduction of the new seed-fertilizer technologies. At the same time, their links with large-scale industry (providing a demand for capital and intermediate inputs) tend to be strong.^{1/}

254. The deceleration of industrial growth in India in the past decade, coupled with high rates of unutilised capacity in most manufacturing branches,^{2/} has led to a widespread search for causes and an identification of constraints, but with very little consensus among analysts. Poor domestic savings rates in the 1950s and 1960s and a shift in the intersectoral terms of trade in favour of agriculture have been singled out by many: as foreign aid dropped off sharply towards the end of the 1960s, the capacity to finance the high rates of industrial investment, particularly public investment, weakened considerably. The fall in public investment is evident from the following figures.^{3/} The fall in public expenditure also choked off the major source of demand for industrial goods produced in the private sector.

Growth of public expenditure and investment 1961-1974

	<u>Average annual growth rate (percentages)</u>	
	<u>1960/61-1964/65</u>	<u>1964/65-1973/74</u>
Gross fixed capital formation of public sector at constant prices	9.1	0.7
Total expenditure of central and state governments and union territories at constant prices	13.2	2.0

255. A shift in the terms of trade would reduce profit margins in industry if real wages do not fall, and the low taxation of agriculture signifies that the surplus generated in that sector would not be available for public investment. Furthermore, the surplus in the

^{1/} India.

^{2/} Taken from P. Patnaik, *Industrial Development in India since Independence*, Social Scientist, No. 83, Trivandrum, June 1979.

^{3/} D. Nayyar, *op.cit.*, p. 1271.

the hands of large farmers has been accumulated in the form of liquid resources, as large foodgrain stocks have been built up by public procurement and storage. Under these conditions, the fear of speculative behaviour by the surplus-holders has checked the government from engaging in high levels of deficit-financing for industrial investment, to avoid fuelling inflation.

256. Net domestic savings, however, have risen in recent years to a proportion of net national product, from 11.2% in 1965-66 to 15.9% in 1976-77. Net aid inflows have also recovered substantially from their low levels in 1972-73 (from Rs 159 crores to a level of Rs 1153 crores in 1975-76, around which level they have remained).^{1/} Aid authorizations have also tended to remain unutilised. Direct taxes, at the same time, have remained very low at less than 4% of national income, while the tax burden has been shifted increasingly onto indirect taxes (from 4.2% of national income in 1950-51 to 15.2% in 1976-77). The low taxation of agriculture has been notable since the 1950s, when public expenditures in that sector have consistently outstripped public revenues. "From 1950-51 to 1964-65, only 7.5% of additional income was paid by agriculture in taxes, compared with 44% for the non-agricultural sector. Even more striking is the fact that in 1960-61 the agricultural upper-income class, owning 50 acres or more, paid only 6.6% of their income in taxes, contrasted to 18% in the comparable non-agricultural income class."^{2/}

257. Still on the supply side of expanding industrial capacity, there have been frequent criticisms of the high costs and inefficiency of past import substitution industrialisation policies, induced by excessive protectionism, overvalued exchange rates, the malfunctioning of centralised price and wage controls, and the cumbersome, arbitrary nature of the industrial licensing system. Such critics have generally argued that the heavy industry strategy was too capital-intensive for India's factor endowments, and that there were too few attempts to take advantage of export-induced growth in labour-intensive, consumer goods production as exemplified, for instance, by Taiwan's successful growth performance.^{3/} Counter arguments have "underlined the need to take a dynamic view of comparative advantage, one which subordinates the short-term need for stimulating exports to the requirements of ensuring a comprehensive restructuring of industry, capable of sustaining long-term growth without excessive reliance on external assistance. In the Indian context comparative advantage has to take into account the ability of the economy to absorb and adapt a wide range of imported technology, and in time to innovate."^{4/} Nevertheless,

^{1/} D. Nayyar, op.cit., p. 1271

^{2/} E.g. Bhagwati and Desai and Mellor, op.cit. See discussion in India, pp. 107-115.

^{3/} India.

^{4/} Patnaik, op. cit., pp. 6-12.

as in the case of the earlier analysis of Brazil's constraints on growth, it is also clear that the 'easy' phases of import substitution for India are over. Mere extension of protectionism cannot bring the necessary deepening of the production structure for the further substitution of capital goods imports. This would require much greater public investment as well as a large expansion of markets. The earlier phase of industrialisation had a 'top-heavy' character^{1/} based on capital goods production and consumer goods for high income groups, all of which were both technology- and capital-intensive, while the regressive manner of raising financial resources for this effort (indirect taxation, deficit financing) itself inhibited the development of markets for mass consumption goods. In the absence of determined policies for asset and income redistribution, it is difficult to foresee the creation of such markets.

258. The problem of demand for India's industrial growth has come into direct conflict with the social priorities reflected in the planned structure of industry, as the case study indicates. "The pattern of industrialisation inevitably reflects the growth of effective demand rather than the normative distribution of needs projected by plans. And once such a pattern is established, planners are faced with the dilemma that any policy of restraining higher incomes or deliberately curtailing the consumption of these income groups seems to imply a deliberate slowing down of the rate of industrial growth. The recession of 1965 to 1967 and 1975 to 1977 (both following inflationary episodes) highlighted this dilemma. On each occasion, fiscal concessions were resorted to in order to stimulate the demand for consumer durables, contrary to the declared incomes policy of Government."^{2/} One aspect of the demand issue is the relationship between agriculture and industry. since private consumer demand in India depends, to a large extent, on fluctuations in agricultural incomes. Much of Indian industry - particularly the consumer goods sector - is also agro-based in terms of its inputs, in addition to supplying the rural population with everyday commodities such as sugar and tea, cooking oils and cotton textiles. Industrial consumption goods that are chemical- and metal-based, however, generally cater to the upper strata of incomes as luxury and semi-luxury products, and it would require explicit credit and taxation policies by the Government to encourage demand for their consumption. The alternative would be to pay greater heed to the needs of agricultural development and to link future industrial growth much more closely with the growth of incomes from agriculture. At the same time, the emerging industrial structure would pay much greater attention to small-scale industries producing for rural demand. In India, such small industry developments have been noted in particular states which have experienced high and steady rates of growth of agricultural output such as Punjab, Haryana and Karnataka.^{3/}

1/ Patnaik, op. cit., pp. 6-12

2/ India.

3/ Raj, op. cit., pp. 14-15.

However, it is not only agriculturally based growth that is important for industrial demand. but the prevailing distribution of incomes in both rural and urban areas. The impact of unequal incomes and the narrowness of the demand base is shown by the marked differences in consumption of industrial goods by different income categories. Estimates for 1964-65 show that the richest 10% of the rural population accounted for 32.2% of the total consumption of industrial goods while the poorest 50% accounted for only 22%. Corresponding shares for the urban population were 39.3% and 19.9%. Similarly, there is evidence that the sharp rise in food prices relative to other commodities in the decade 1965-1975 resulted in a fall in the proportion of final consumption spent on industrial goods, in spite of a succession of bumper harvests (whose benefits accrued primarily to the rich peasantry and larger landowners).^{1/} The importance of the domestic market to Indian industry argues for much more importance being given to the asset and income distribution requirements for generating a broad-based, steadily growing mass consumer demand.

259. It is when India's efforts to industrialise are placed against broader indicators of development, such as the reduction of poverty, malnutrition, unemployment and illiteracy, that the achievements give least satisfaction, and the entire growth strategy based on the primacy of the industrial sector is brought into question. According to 1969 estimates, and an arbitrary definition of absolute poverty as one of sharing an annual per capita income level below US \$ 50, 44.5% of India's population fell below the poverty line (at 239 million people, this represented nearly two thirds of the total number of absolute poor in 44 developing countries with a combined population of 1.2 billion in 1969).^{2/} On the basis of the minimum income necessary in India to ensure an adequate level of nourishment, another estimate shows that in 1968-69, 40% of the rural population and a little more than 50% of the urban population lived below the poverty line.^{3/} Economists have differed widely on whether, and to what extent, the proportions of both rural and urban populations below the poverty line have increased over the years^{4/} but there is broad agreement that during the 1960s the absolute numbers of poor in India increased considerably. Between the various Indian states, the range is considerable, from 64.7% estimated to live below the poverty line in Orissa to 20.8% in Punjab (1969). Literacy levels have grown relatively slowly in India: while the proportion of the population counted as illiterate was 83% in 1951, this had only declined to 72% in 1961 and 70.7% in 1971. Life expectancy at birth had increased from 32.5 years for men in 1941-50 to 48.1 years in 1969 and for women from 31.7 years to 45.0 years. As the most important factor in this improvement,

^{1/} Nayyar, op. cit., pp. 1273-1276.

^{2/} H. Chenery et al, Redistribution with Growth, table 1.2, Oxford University Press, 1974.

^{3/} V. M. Dandekar and N. Rath, Poverty in India, Dimensions and Trends, Economic and Political Weekly, January 2, 1971.

^{4/} For instance, P.D. Ojha has estimated that the proportion of the rural population below the poverty line increased from 52% in 1960-61 to 70% in 1967-68.

infant mortality declined from 219 per thousand in 1919-20 to 90 per thousand in urban areas and 136 per thousand in rural areas in 1970. However, foodgrain availability in India, measured in per capita domestic availability of cereals plus pulses, actually declined in the period 1956 to 1975 from 431 grammes to 415 grammes, in a period when the total population increased from 397 to 598 millions.

260. In terms of income distribution, India is placed in the intermediate category of developing countries with "moderate inequality",^{1/} with the lowest 40% of the population sharing 16% of GNP and the top 20% enjoying 52% of GNP (1964). These figures would place India in the same category as the Federal Republic of Germany in that year. Urban inequality, however, is more marked than in rural areas: the richest 20% of the rural population enjoyed 43% of total income while their urban peers appropriated as much as 57% of total income.^{1/} In the 1960-61 to 1967-68 period, most of the growth in per capita income was shared by the top 40% of India's population, with the bottom 5% in rural areas actually suffering a decline in per capita consumption expenditure. Meanwhile in urban India, the bottom 40% suffered a decline, which may have been as much as 15-20% for the poorest 10% of the urban population.^{2/} The process of growth and industrialisation has thus increased the degree of income inequality.

261. It is again evident that industrialisation has not seriously dented the problem of unemployment in India. According to the 1971 census, workers in the secondary sector of manufacturing and construction comprised only 11.2% of the labour force, a proportion that had barely changed since 1950 (10.8%). The unemployed had grown from 2.6% of the labour force in 1951-56 to 11% in 1972. The absolute numbers of unemployed had reached 18.7 million by 1971. Estimates of those who are severely underemployed would probably bring the total proportion to 15% of the labour force.^{3/} Even among the educated, unemployment has grown sharply, from 590 thousand in 1961 to 5.1 million in 1976, with the biggest increases registered among university graduates. The relationship to poverty is evidenced by the observation that three quarters of the unemployed are estimated to have grown by 8.36% per year between 1961 and 1973 in the public sector but only by nearly 60% of the total employment). Overall, employment growth in all non-agricultural occupations was of the order of 3.8% per year during this period.^{4/} Factory employment during 1951-68 grew at only 2.9% annually, a rate that is not much higher than the natural growth of the employed labour force, let alone sufficient to absorb the backlog of urban unemployment or rural immigrants.

^{1/} Chenery, op. cit., p. 8 and p. 21.

^{2/} Dandekar and Rath, op. cit., p. 40.

^{3/} Report of the Committee on Unemployment, May 1973.

^{4/} These figures refer to the organised sector, including all public sector establishments and non-agricultural units employing more than 10 workers in the private sector. Reserve Bank of India Bulletin, February 1975.

262. Real wages in industry have remained virtually stagnant, according to the fragmentary data available. With 1951 as base after an upsurge to 1955, in 1964 the index for employees earning less than Rs 200 per month stood at 184. There was a recovery to the levels of the early 1960s only around 1970, but the post-1972 inflation together with the decline in money earnings during the Emergency period has almost certainly brought real earnings today to a level below that of the early sixties... On the whole, therefore, the current level of real earnings may not be much higher than in 1939. This is not to say that with changing industrial composition and the creation of many more skilled jobs, opportunities have not been opened up or utilised, but the picture of stagnation remains roughly valid for any particular category of workers, especially unskilled workers.^{1/}

5.4.3 Future Directions and Requirements for International Co-operation

263. Given these problems of Indian industrialisation, the case study suggests that the future path of industrial growth is likely to be strongly influenced by an overall development strategy with a renewed commitment to removing poverty and satisfying basic needs through a major emphasis on agriculture and rural development.^{2/} The earlier thrust on developing a strong and diversified capacity for capital goods production should provide the basis for an industrial investment pattern which provides (a) essential inputs to agricultural development and the associated infrastructure and construction requirements, (b) mass consumption goods and housing materials for the rural population and (c) continuing attention to producer goods industries vital for long-term growth, including petroleum and basic chemicals, coal and cement and the whole range of modern engineering industry. The last of these in particular will mean that high priority will continue to be attached to the acquisition, absorption and dissemination of 'frontier' technologies in key areas (e.g. energy sources, sea-bed mining, electronics). Overall, however, "the expansion of industrial capacity, and the acquisition and absorption of technology more or less indiscriminately determined on the basis of current consumption patterns of industrial products, would be replaced by a conceptual framework in which industrial development and technological advance are perceived as instruments supporting a development process, a process which is aimed at achieving concrete welfare goods in a definite time frame... Industries would not necessarily be treated as leading sectors of the economy, deserving pre-emption of resources. Investments in expansion of industrial capacity would have to be justified in terms of specific criteria outlined above."^{3/} Pricing and fiscal policies would have to restrain the growth of consumption of urban middle- to high-income groups.

^{1/} Patnaik, op. cit., p. 10.

^{2/} India.

^{3/} Ibid.

264. Areas that have been singled out for urgent attention are to improve the efficiency of installed capacity in industry by higher utilisation rates, export competitiveness (in some cases by increasing plant size to optimum levels), upgrading technology, and greater expenditure on research and development. New investment in the traditional but increasingly obsolescent industries such as cotton textiles, jute manufacturing, sugar and tea and the old engineering industries, is likely to yield rich dividends, as are measures for energy conservations, research in alternative sources and in appropriate technologies for reduction in the energy intensity of industrial production (which has almost doubled from 1960-61 to 1975-76).

265. The future use of external resources has to be guided by recent experience with state policies. The country's external account has been substantially improved by the spurt in agricultural production since 1968-69 and the large growth of remittances from Indians abroad, but the surplus on invisibles has also been due in large measures to a series of policy measures in recent years while continuing India's traditionally conservative use of commercial credits and short-term borrowing: limiting DPI to technology sophisticated areas and promoting the joint venture form of co-operation; restricting capital movements through banking channels and ensuring stricter observance of foreign exchange regulations (since 1974) and the impact of containing domestic inflation rates on export success. In the future, if industrial strategy itself changes in the directions outlined, there will be an increased need for external finance on concessional terms in order to meet projected foreign exchange gaps: to import industrial raw materials, metals and chemicals, finance temporary imports of steel, cement, and fertilizers, and wage goods for the rural population, and a limited quantity of capital goods for specific projects. Some import liberalisation to improve the utilisation of domestic capacity and promote efficiency in capital goods production may be required. If foreign aid is to be effectively used for these purposes, then the long standing attempts to shift lending to a more programme rather than project framework (for which the consortium approach provided tentative beginnings) have to bear more fruit.^{1/} The diversification of aid sources that started in the late 1950s with large-scale assistance to public sector industry from the East European bloc would be expected to continue. In trade policy, the importance of state assistance to exports in an imperfect international trading environment is likely to be significant, as will participation in measures to improve access to IC markets such as the Generalised System of Preferences, and the reduction of non-tariff barriers. Although some reciprocal lowering of India's barriers against imports (particularly quantitative import controls) may be possible for capital goods, the strict control of consumer imports for upper-income demands would have to remain an essential part of the new strategy orientation.

1/ India.

266. In exporting capital goods and projects, however, regulation of the terms of commercial credits, and the expansion of multilateral, freely convertible aid for financing industrial and infrastructural projects in other DCs would be in India's interests. Similarly, the strengthening of institutional arrangements for economic and technical co-operation among DCs should encourage both technology transfer as well as mutually beneficial joint ventures. Indian public sector enterprises should be allowed to widen their scope of foreign collaboration to set up production facilities linked with import requirements of industrial raw materials (e.g. sponge iron, wood pulp, ammonia). "Joint ventures might also be set up in India, on the lines of the Kudremukh project (for pelletized iron ore) for exports of alumina, processed ores or industrial equipment components and spares under 'buy back arrangements'.^{1/} Bilateral trading arrangements with other countries in South Asia, as well as with ASEAN and COMECON are likely to be the direction of trade association for India rather than participation in regional trade groupings that she is likely to dominate because of her size. The pattern of trade with East European countries is likely to shift from annual trading and payments plans to some form of "production sharing" or planned expansion of output of specific commodities in either country for supply to the other. The potential for joint exports to third countries is also being explored, as are shifts from bilateral payment agreements to the settlement of accounts in mutually acceptable convertible currencies.

267. What may be foreseen as a much greater role for Indian exports of industrial products before the end of the century, emerging as a major competitor to Japan and China in the markets of West and South-East Asia, increasingly covering not only individual items of machinery but complete plant and equipment, and design, engineering and construction facilities. To fulfil this role responsibly, India would have to accept some degree of trade and exchange control liberalisation, without, however, giving up the management instruments required for steering her internal development along the lines of 'endogenous growth' referred to earlier. The same considerations guide India's interest in future capital inflows, whether through official development assistance, commercial bank loans or DFI. As long as CDA can be provided without overt political conditions being attached, and when aid levels can be prevented from reaching a point where the withdrawal of aid, or threat to withdraw it, can affect the country's freedom of action, the best form for it to be provided is in the form of balance of payments support granted on the basis of assessing the overall performance of the economy rather than of specific projects. Failing that, ODA terms should minimise project tying at the same time as maximising flows of aid untied to sources. A return to the system of fixed parities, and an increase in international liquidity as well as enlarged capital transfers to DCs through the SDR link, would be seen as helpful to providing a more encouraging international environment for countries such as India. Use of commercial loans may expand from institutional sources including Eurodollar markets and the possible issue of bonds on US/European markets, but is likely to remain conservative in order to avoid large accumulations for foreign

^{1/} India.

debt: its use may be confined to financing specific projects with commercial yields such as the development of off-shore petroleum, or export-based metal exploitation projects. Some degree of capital aid to smaller DCs in the form of goods, the encouragement of joint ventures, and the provision of supply credits for Indian exports, are likely to be undertaken increasingly by India as long as the overall outflow of capital does not prejudice internal requirements and harm international relations with the receiving host countries (i.e. by replicating fears of conventional TNC behaviour).

268. India is also likely to maintain its policy of a selective approach to attracting direct foreign investment, particularly in order to acquire technologies required as part of the overall development strategy. While an international code of conduct for TNCs would be supported, there would be less enthusiasm for an international law enforcing such a code.^{1/} Attempts to augment private flows through attracting investment in DC industrial enterprises by institutional investors such as mutual and pension funds by providing insurance and guarantee systems are not seen to be particularly helpful. "The degree of protection sought by institutional investors in the richer countries tends to rise with every round of negotiations, and the cumulative demand is for riskless investment with guaranteed minimum return and opportunity of earnings in excess of the average return on capital invested in the developing world." Other risk-sharing arrangements for attracting private capital, such as co-financing with international lending institutions may increase private institutional lending but not necessarily the general pool of loanable resources for development, by tending to reduce ODA and its cost.^{2/}

269. In general, the case study urges caution in generalising from India's past experience of industrialisation in drawing lessons either for other DCs or for India's own future needs. "It cannot be too strongly emphasised that India is not a 'typical developing country', there is no single paradigm of development or a clearly established growth path which all poor countries can or should follow; no accepted typology of developing countries exists, although distinctions are possible in terms of geography, market size, natural resource endowment, human resource development and political structure... None of the important ideas in the literature of development is of universal application, and it is a dangerous simplification to suppose that policy prescriptions derived from these ideas can be applied to all poor countries in all phases of development... What is important for any developing country is that its development goals should be clearly defined, appropriate stages devised for reaching these goals, and that the effort be sustained over an adequate period."^{3/}

^{1/} India.

^{2/} India.

^{3/} Ibid.

Some Concluding Observations

270. The three country studies each clearly underline the need to pay attention to the particular circumstances that have attended that country's industrialisation, and, consequently, emphasise the caution with which one might attempt to generalise from its experience. However, it is equally clear that the country analyses serve to illustrate the arguments of earlier sections, and to highlight the importance of specific issues that are of obvious relevance to international co-operation.

271. In spite of the vast differences in size and economic weight between Trinidad and Tobago, Brazil and India, a common outstanding feature has been the preponderant influence of the international economic environment on the shape and pace of national industrialisation. For all of them, modern industrialisation was initiated through a process that was "export-determined" in the sense of responding to the fortunes of their primary export earnings in world markets. Spurts of industrial growth took place in periods of war or global recession, giving a large impetus to the national substitution of manufactured imports. More recently, once industrial capacities had been established, the boom in world trade in the nineteen sixties and early seventies stimulated a fast pace of growth in manufacturing output to meet export demand, particularly within their own regions. The subsequent downturn in world trade is likely to have an equally strong negative impact, now that the prospects for further import substitution are much more limited.

272. A related characteristic has been their dependence on external resources to carry out their industrialisation. Dependence on foreign technology has been the most evident and thorough going, once the process started with the manufacture of products that simply took the place of imports. At the same time, there are few signs that this dependence will diminish at the technological frontier in spite of successful imitation, particularly in the case of India. Experience with direct foreign investment has been more varied, with Brazil and Trinidad relying much more than India on DFI, notably in the fast-growing, export-oriented branches. In contrast, external finance has fuelled industrialisation in all three countries, although the forms used carry different weight: private commercial loans and short-term credits have been a more important source for Brazil and Trinidad, while India has made greater use of public funds from bilateral and multilateral sources. These differences have had their consequences for the tremendous debt burden with which Brazil is saddled, at the same time that external finance has helped to maintain a very high rate of industrial investment: it is only the good fortune of the recent oil price adjustments that has saved Trinidad and Tobago from a similar fate. For the oil-importing countries, growing deficits in the external balance make it very critical either to find new forms of external finance or to make drastic changes in the pattern of industrial growth in order to diminish the need for imported inputs.

273. Differences in national policy with regard to the protection of domestic industry and the attraction of foreign investment, particularly by transnational corporations, have

also had mixed effects. TNC investments have undoubtedly helped to install much of the capacity in consumer durables and to stimulate Brazilian manufactured exports, but this may have been at the expense of a greater degree of technological dependence than in the case, for instance, of India. While India's policies of high tariff, inward market orientation and restrictive licensing towards foreign corporations, have been criticised for being inefficient, expensive, and failing to take sufficient advantage of export markets, it may be a lesson that technological development and domestic entrepreneurship in industry require an extended period of protection. The experience of other countries, such as South Korea, however, appear to indicate that it may be active protection by the State rather than tariff protection that is needed to stimulate domestic entrepreneurs to the full.

274. Regardless of ideology, the three cases demonstrate the rapid growth in the role of the State in DC industrialisation, from the setting of macro-economic controls and stimuli to providing finance, undertaking R + D, and investing directly in a growing range of industries. Theoretical biases towards the public or private sectors seem to have an influence only on the extent of co-operation between the two, thereby affecting the performance of both in a situation of interdependence in mixed economies. The increasing importance of the State as an actor may presage a growing role for inter-governmental agreements as forms of international co-operation.

275. All three countries, as the dominant industrialisers of their respective regions, have taken advantage of growing "South-South" exchanges in manufactured goods, technology transactions, and movements of skills. As the industrialised countries raise barriers against DCs in an attempt to protect domestic employment in their older industries, the more industrialised developing countries such as these may be expected to search more actively for cooperative mechanisms that allow for resource transfers with other developing countries, and perhaps some degree of jointly planned and owned industrial investment. Such moves would be welcomed by transnational corporations anxious to make use of complementary skills, cheap labour, finance and markets available within the Third World; but they do not add up to a genuine desire to forge collective self-reliance as defined above.

276. The three cases conform fairly well to the earlier discussion of industrialisation styles, with Trinidad and Tobago illustrating the Externally Responsive Style A, and both Brazil and India as opposing variants of the National Goal-Focussed Style B. In the case of India, its much larger subsistence agrarian base has limited its industrialisation policy options, and made industrial performance continually sensitive to agricultural fluctuations. The extent to which Brazil has been able to shape its economic policies to direct output towards external clients (already in difficulties when its overseas markets are facing recession) would be difficult to envisage for the unwieldy Indian economy - with its immense regional variations, political differences and dispersed millions of small producers. To some extent, the duality of India's industrial approach - the limited protection and support of small industry, the cumbersome licensing policy - has helped to

preserve indigenous entrepreneurship with traditional skills better than in the other two cases. This has also exacted its price in terms of policy consistency and the overall pace of private industrial investment. The case studies seem to indicate some potential for a change in style in all three countries, with a preference for adopting at least some aspects of the Social Priorities-Determined Style C, as the social problems become more acute.

277. With very little attempt at altering the underlying socio-economic structures, industrialisation has not contributed in any significant measure to alleviating mass poverty in any of the countries. The patterns of industrial investment and the increase of economic concentration have contributed instead to increasing inequality of income and property. Brazil may have performed best in terms of increasing industrial employment, but the real wages of unskilled workers have remained very low in both the large countries. One significant common feature has been the key role of the growth of consumer durables in overall manufacturing development, and the way in which the State's fiscal policies - particularly in the case of Brazil - have been subordinated to sustenance of this sector. The rise of a consuming middle class have become a precondition for the success of an industrialisation strategy that must be based - in style B - on a large and dynamic domestic market. The domestic demand constraint has become increasingly critical for all these countries, while a large impoverished rural population yields a steadily diminishing surplus for industrial investment.

278. In terms of the discussion of national self-reliance, or of indigenous industrialisation, the policies inherent in these concepts have yet to find an adequate place in the countries studied. One point of hope is that, at a time when the international economic environment is turning more hostile, and external resources become more scarce, Third World countries may be forced into a "strategy" of self-reliance. The three countries illustrate, as well as any others, an end to the "honeymoon" period of industrialisation, when the illusion of a panacea could justify its recklessly favoured treatment. The difficult era has begun, of stimulating innovation and entrepreneurship on a large scale throughout the national society through the promise of equitably-shared rewards, of integrating the national economy more closely, and of making much more selective use of international economic co-operation for industrialisation.

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INTERNATIONAL CO-OPERATION IN THE INDUSTRIALISATION PROCESS
THE CASE OF TRINIDAD AND TOBAGO

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A. THE FRAMEWORK OF INTERPRETATION1. Perspective:

A minor American country, Trinidad and Tobago is a major Caribbean territory having a population of 1.2 million and a (1976) G.N.P. per capita of U.S. \$2240 and enjoying the status of the foremost trading member and a leading manufacturer in the Caribbean (Economic) Community (CARICOM). The economy has been variously categorised:

as one amongst those of the so-called South which have been making the demand for a new international economic order;

as one which, if the Lima target is to be realized, must adopt an accelerated programme of manufacturing expansion;

as a resource-poor producer of petroleum which has been precipitated by OPEC prices into the middle-income bracket; but

as one which, by most indicators¹ would fail to rank amongst the states popularly regarded as developed or unequivocally developing; and therefore as one which might qualify for special analysis or for special concessional assistance on grounds of its vulnerability as island, small, open and primary-producing.

Useful as undoubtedly they are for purposes of the global analysis of the international economy undertaken by the World Bank, UNIDO and such agencies, none of these approaches to classification quite succeeds in locating the country in a framework congenial to an understanding of the issues surrounding economic transformation and the part to be played in it by the growth and spread of manufacturing activity.

The economics of deliberate change needs to focus on those institutions and mechanisms which inhibit and sometimes stunt the natural process by which a society would normally feed, clothe and shelter its people out of the resources of its own place and through the resourcefulness of its own people. Doubtless the value of country (or case) studies lies in the contribution they would make to such a focusing as well as the improved classification that very possibly would follow, yielding a typology of economic systems of the sort long suggested by Dudley Seers². What the model of each type should uncover are the peculiar settings in regard not only to economic structures, resource availability, priority objectives and critical choices but also to the manner in which economic intervention may be limited (or facilitated) by the wider historical context.

The articulation of any such set of paradigms is of course an extremely tall order if only because even the empirical bases still remain to be properly established. So it is not at all surprising that the UN Study on The Future of the World Economy³, as a first approximation, settled for a pretty rough and ready scheme. Its 15 categories are based on groupings determined by geography, by level of development measured in terms of income, and by ideological differences which are thought to distinguish so-called market systems of economy from those that are so-called centrally-planned.

The risks of that scheme are immediately evident in the fact that such economies as Mauritius; the Panama Canal Zone; Puerto Rico; the Virgin Islands, Bahamas, Bermuda, Cuba, the Turks and Caicos, the English Windwards and Lewards and the Netherlands Antilles;

and Barbados, British Honduras, Dominican Republic, French Guiana, Guadeloupe, Guyana, Haiti, Jamaica, Martinique, Surinam and Trinidad and Tobago, all manifestly similar economies in one historical perspective, end up in no fewer separate classes than four, each being the subject of a different projection up to the year 2000.

In the perspective of this study, the concern with industrialization arises out of the special relationship developed over the last 500 years between the countries of the North Atlantic and (the) most of the remaining world. Sustained imperial domination followed by the sudden post-war breakup of empire clearly has resulted in efforts at rapid decolonization. But the meaning of this process is not as straight forward or as obvious as it may seem.

The political and psychological importance of getting even with the Mother Countries has engendered a massive confusion between the mere manifestation of imperial hegemony and the substantive attributes which define the capacity of states to be active in the world of affairs and be effective on their own account. Thus development has been taken to be a catching up event and the process of industrialization has been regarded not so much as an all-round acquisition of economic viability but as a mechanical process of promulgating manufacturing activity so to speak, virtually by means of exogenous magic.

Related to this obsessive misconception which so richly informs the notion of developed and developing countries and instructs the strategies in vogue for most of the post-War period, is a positively mischievous set of distinctions between traditionalism and modernity, between agriculture and industry and between country and town. The ultimate peril of this approach is that many countries may have become wedded to enduring futility for the simple and obvious reason that they have been shooting at a moving target and most times at a swiftly fleeing one. The so-called developing countries have often not been able even to discover their own objectives without reference to the path of evolution transversed and still being travelled by the so-called developed ones.

To some extent this confusion between process and product and between incidental and fundamental may have been inevitable precisely because cultural contact has been the crucial factor in the colonizing scheme. Catching-up, it follows, is to that extent an imperative of cultural adaptation so that modernisation becomes not merely an objective requisite of survival in the sense that Toynbee has argued in The World and The West, but also a necessity in terms of a subjective valuation, validated by culture - if such a distinction has any meaning at all.

Nevertheless for those who are caught up with the deliberate promotion of modernisation, industrialization, development and change, the challenge then is to disentangle the confusion by separating the incidental from the fundamental and providing a basis for judgement which, at the very least, might break the chain of futility. Perhaps most of the error in strategy, policy and theory committed by development economics in the early initiatives towards post-War decolonization has sprung from a failure to invoke the resources of history. Fortunately, that error is increasingly being corrected.

As thought has adjusted, it has become almost a fashion to fix the issue of transformation against the historical background of Atlantic civilization so much so that development and underdevelopment are now widely accepted as joint products of a single international order.

In some ways, we are more clear today about the character of past international interdependence than we were at the time when the debate was centred on the gains-from-trade by Lewis/Singer/Prebisch/Myrdal or when Marxism alone explored primitive accumulation and surplus realization, or even when, in the Caribbean, the historians first sought to establish a vital connection between the debility of the slave-plantation economy and the vigour of ever expanding industrial capitalism. The nature of the interdependence has now been rather more precisely defined in terms of domination and dependence in a world divided between periphery and centre (or core), between hinterland and metropole. Myrdal's notion of spread and backwash areas has been elaborated in concepts which contrast active to passive incorporation in the world order and distinguish locuses of decision on the one hand from locuses of repercussion on the other.

So much indeed has already passed into orthodoxy at this level of generality that there already exists a rising demand for differentiation amongst the economies, societies and polities which have resulted from the initial cultural clash and the continuing cultural contact. Immediately the question posed here is whether the outcome has been a single capitalist world order with a range of different sub-types, as has been suggested,⁴ or a number of distinct systems each of its own kind?

Promoters of industrialization might regard this consideration as no more than matter for fruitless polemic and in any event remote from the pressing choices of economic policy and programme. But in practice the issue does have a tremendous bearing on how the options are actually perceived in the countries said to be in the process of development, as in the countries said to be developed, and therefore, in the international agencies charged with related responsibilities.

That the so-called developing countries have been subject to a debilitating domination is of course the central hypothesis shared by a wide range of contemporary interpreters of economic history. Yet there is a related hypothesis which has not been rendered so explicit and which is that these countries have also been subjected to an insistent intellectual domination.

Perhaps the most important implication of this intellectual domination for the current reappraisal of strategic options in economic change has been the evolution of science, which once served as an ideology of Western European (and Christian) liberation from the Islamic hegemony of the Mediterranean, into an ideology of North Atlantic domination of most other parts of the world. This development has been important as much to the radical post-Marx tradition in the so-called West as it has been to the liberal and conservative traditions. For our purposes, the crucial corollary of the role of science as Western ideology is the part played by social science as its most effective cutting edge, with economics in particular, replacing anthropology during the post-War period as the most arrogantly parochial of the disciplines. The errors of development theory provide possibly the most eloquent evidence in question. But not more than a moment's reflection is needed to confirm what Dudley Seers has described as "the limitations of the special case."⁵

Within the North Atlantic scheme of thought itself, it is increasingly being acknowledged that economics has been severely bound by culture as much in regard to space as in regard to time. It is obvious that the models articulated or implied successively by Ricardo, Marx,

Marshall, Keynes, etc. derive their power from the specific focus they gave to particular institutional arrangements which governed the provisioning process in the societies which these theorists actually studied. And yet such a highly specific arithmetic has tended to be projected onto altogether alien contexts as if it were a more general or even a universally applicable algebra.

For example, the classical theory of capital accumulation and economic development finds point only within its own particular geographical, political and social framework, as can be seen from the particular technical (or objective?) relationships which are selected for emphasis. The breakup of the feudal manor, the enclosure movement and the agricultural revolution entail a separation of country from town, agriculture from industry and links the problem of economic welfare in a practical and urgent way to the physical availability of goods to different classes. The conflict of interest in the new spatial and social setting is therefore between landlords from the old regime and the workers and capitalists of the new.

The product falls into rent, profits and wages so that Ricardo, concerned with the interest of industrial capitalists as against those of the landlords, focuses his model of accumulation on excessive appropriation by rent and points the policy implications towards such of its institutional underpinnings as the celebrated Corn Laws. Coming later, Marx's theory of accumulation takes the side of the proletarian workers and explores the relation between profits and wages so that the technical relationship which comes to the fore emphasizes the wage rate and the rate of surplus expropriation on the one hand and the structure of output between wage goods and producer goods and the level of development of productive forces on the other. In other words much of the baggage acquired by the "scientific" interpretation derives from the historical context and is selected by "ideological" concern.

We find another potent example in the Ricardian theory of comparative advantage which is a useful way of regarding the policy options in international trade only where the institutional premise is the existence of a number of nation-states all actively incorporated into the international order and engaged in metropolitan rivalry each on its own account. It should be appreciated that the domestic correlate of such an international model is the presence nationally of widespread competitive entrepreneurship, a postulate which is captured in the pure theory of international trade, so-called, by the assumption that there always is full employment of all domestic factors. Some of the steps in the algebra are missing but are unnecessary precisely because contextual relevance is what discriminates between what need and need not be stated in the theoretical scheme.

To apply the doctrine of comparative advantage to what are now being described as situations of unequal exchange is simply to impose damaging ideology and to import institutional confusions as continues to be the practice even today when much of economic theory would seem to be in revolt against metropolitan domination. The problem of imposing ideology is however, much larger than the mere illicit transfer of such loaded doctrines as industrialization, modernisation, development, comparative advantage, etc.

The danger is that we might uncritically be imposing upon ourselves a Euro-centric view related to which is an economics-centred view, more dear perhaps to those who write in the European radical tradition. Some have readily perceived that the Marxian pre-occupation with

surplus expropriation introduced a world view-to economics quite different from the Ricardian concern with profit. Yet curiously, such radical thought has been slower in seizing the fact that there is a whole new vista to be opened up when economics is viewed not from the standpoint of the dispute between the metropolitan working class and the industrial capitalists but from the standpoint of whole countries beyond the pale of the metropolitan centres.

It may be flattering to the North Atlantic ego to adopt the view that in the desparately brief period of five hundred years, Western European capitalism simply remade the other civilizations and cultures in its own inglorious image. Both the radical and the liberal traditions seem to be content with the model which places European technology at the dynamic centre of history and the development of the forces of production in the vanguard of social change. It may be a comfortable view but it is equally a risky one.

Once this risk is perceived, however, thought must immediately become wary of such concepts as the Third World which in terms of a local quarrel within the metropolitan world, simply begs the question as to what separate and distinct social creations emerged from the mix between European enterprise and the widely differing cultures successively incorporated over the 500 years or so, into a web of international trade and payments. If we are duly wary the next step is to recruit the help of history in the settling of our classification. We must proceed by uncovering the founding matrices of contemporary civilizations, the timing of their creation, the cultural, social and political as well as the economic ingredients that went into their making and above all, we must trace the careers which these systems of society have experienced over the extended span of time.

It is here perhaps that the special relevance of the Caribbean experience comes directly to the forefront of the imagination. The great difficulty which accompanies the recruitment of history to the purposes of theory is the recurring decimal, so to speak, of infinite regress. As if the problem of weighting the influence of different forces is not enough, we have the extra burden of deciding where precisely did relevant history begin? In this regard, however, the Caribbean overburden is incomparably lighter than most - its post-Columbus history being, in the nature of the case, much more unencumbered than most other regions of the world.

The distinguishing feature of the social formation in the post-Columbus Caribbean is that it is vitually a new creation, its institutional inheritance from the pre-Columbian era being largely immaterial. In this respect, it seems to be qualitatively different from say, Andean America, where the Conquest Colonies carried an institutional past into the making of a modified economy and society. Equally, much of North America seems to have been born out of the transposition of European concerns to American ground resulting in a matrix as different from the Andean Colonies of Conquest as from the Caribbean Colonies of Exploitation, as the latter have been termed⁵. However much the recurring European component in all these post-Columbian societies has served to urge the notion of a single system, a common sense approach requires that the hypothesis be submitted to the facts of each case. Being geographically made up of small islands, socially made up of almost wholly imported peoples, having been endowed with institutions specifically designed to favour economic exploitation and having experienced a career of no more than 500 comparatively well-documented years, the Caribbean provides us with an excellent case study.

Here capitalism was able not only to choose but to prepare the ground on which it would play. The social order was built up by controlled migration into the definitive context of the slave-plantation. The political system for a long time did not even acknowledge the existence of any but a transient political community.⁶ The embedding circumstances of the plantation economy seem such that the reality of a controlled experiment in society itself possesses the caricature-elements of a theoretical model. Thus an actual model of the Pure Case of Plantation Economy proves extremely potent in revealing the essential character of the problem of accumulation, development and provisioning in the Hinterland (peripheral) economies which have been moulded in this study that here we have an exceptional point of vantage from which to perceive many crucial issues in contemporary industrialization.

2. Pure Plantation Economy

This constitutes the extreme case of a hinterland or peripheral economy. It is not merely dominated by Metropolitan economy but is created by the latter for the sole purpose of providing commodity supplies. Hence there is complete export specialisation and all final output is sold abroad. There is a category of intermediate output but it is specific to export production at the micro-level where it is all used up.

It follows that the question of a self-reliant economy does not arise. The political system acknowledges no political community and Government is Imperial Government. Administration is feasible because the private sector and the public sector are one and the same thing. There is no distinction between business organization and society⁷ except that the latter is fragmented into slave plantations. Collectively planters provide Planter Government which is essentially a lobby on Metropolitan Government since the slave organization of labour fixes the potential political community in the status of capital which provides export staple production on plantations with the service of labour-power.

With no labour in the system, there is no wage income. The consumption of slaves is equivalent to an intermediate input devoted to the maintenance of plant and equipment (i.e. capital). By elimination, the only factor income in the economy is a Mixed factor Income (Y) which combines salaries of management, (attorneys), rent of lords proprietors, normal profits of planters, taxes to Government, and to merchants, venture profit when business is good and debenture interest and depreciation when business is bad.

All these factor incomes accrue abroad as investment income on the current account of the balance of payments. The current consumption of attorneys (managers) is a cost of production similar to the subsistence of slaves or the expense account of modern-day corporate executives. The distribution of the Mixed Factor Income is indeterminate.

Accounting prices prevail because trade in goods and services is not only exclusively international trade implying zero structural interdependence within the hinterland but is also all intra-firm trade implying a system without overt prices. Trade in fact is administered trade but the administration is private and micro-economic rather than public and macro-economic.

The actual organization of enterprise is undertaken by loose associations of proprietors, (prospective) planters, merchants bankers, etc., all putting up joint stock. In practice these "companies" fulfill exactly the role that is today attributed to multi-national

corporations. They are the private administrators of trade responsible for adapting the framework of competition (and comparative advantage) to the practical necessities of business. Above all, they allocate authority in such a way that the merchant plays the part of the Head-Office in the present-day scheme of things.

The merchant controls the vital processes of provisioning the Hinterland with its imports and of organizing the disposal of exports. In both these processes, commissions are largely discretionary and always constitute the priority claim on export earnings so that national income is best regarded as residual after factor income going abroad has been paid in the form of merchants' venture profits. On the assumption here, factor income going abroad actually consumes the whole domestic product and national income is zero.

The accompanying Accounting Framework is meant to capture these essentials of Pure Plantation Economy. The outlines are so stark that one commentator has described the corresponding model as being particularly "gimmicky".⁸ The properties of the system described, however, are a pretty close approximation to those of the Caribbean economy in the 200 years leading up to 1840. It is not too far from the facts to say that there existed only one sector which produced only staple for the purpose of export.

What is dramatised by our caricature is that the central conflict in Plantation Economy is between staple activity on the one hand and residentiary activity on the other. The owners of the Hinterland economy are absentees and have no use for surplus which is not realised in foreign exchange. Hence the economy is instituted for the purpose of producing staple.

The power of cumulation then makes residentiary activity increasingly less feasible to launch let alone sustain. Initially the problem appears as one of income distribution. Surplus is high in relation to product and exercises a priority claim upon it so that accumulation proceeds at a rapid pace engrossing land at the extensive margin and deepening slave-capital at the intensive margin. As the system expands - moreso on island as against mainland - residentiary activity is increasingly frustrated as much by the unavailability of land as by the growing export specialization of infra-structure, techniques and skills and the feebleness of demand for domestic output on account of the long history of forming taste for imports. Thus the specialization in export staple tends to perpetuate itself and to drive out residentiary activity altogether.

It must be seen that this effect is attributable to the indiscriminate expansion of exports in the first place, itself a result of the under-appropriation of product by the slave-community (and its over-appropriation by the planter community) and of the related need for surplus to accrue in foreign exchange. Here we have the clue to the post-War failure of industrialization programmes in hinterland or peripheral economies which had a career of staple specialization. The Caribbean countries provide excellent examples with Trinidad and Tobago being perhaps one of the most extreme of the cases.

3. Modified Plantation Economy 1838-1938

The export earnings generated by the sugar industry in the Caribbean in the 17th and 18th century were probably on a scale no lower than that of the receipts now occurring to the so-called capital surplus oil exporters of OPEC. But as we have asserted, the export surplus accrued under conditions which prevented it from being invested in creating supply to meet

domestic demand. The externally-propelled economy disposed of its funds in pursuit of accumulation in the staple industry (i.e., to buy more slaves), for importing more provisions in aid of further export expansion and for procuring more luxury consumer goods for owners who either lived in the metropolitan countries or who spent as if they did.

The economy did not "industrialize". It did not and could not. Buoyant staples were not a sufficient condition for that. A certain institutional flexibility was required in order to create an opening for and to give a dynamic to residentiary enterprise on the side of supply and to domestically formed tastes on the side of demand. Such an opening seemed in part to have been created by the break-up of the slave plantation.

In the post-emancipation period Trinidad seemed to have been exceptionally well-placed to develop a residentiary economy. The slave plantation economy had not engrossed any considerable proportion of the terrain as it had done in say Barbados or St. Christopher. Hence land was available to produce for home consumption and levels of productivity and income in such activity promised to be high enough to enhance wage rates and therefore to reduce the level of surplus appropriation in the export staple sector. National Income promised to be a larger share of Domestic Product.

The promise however was not to be fulfilled. Public policy first of all, effectively withheld land from residentiary activity. Secondly, in a context where consumers had inherited a legacy of taste for imported consumer goods and where productive capabilities were still biased towards staple output (if not completely specialized in their production), there survived a need to earn foreign exchange and this was enhanced by tariff policy. Thirdly, the import of indentured labour for staple production was encouraged by budgetary subsidies so that the wage rate in the export sector was duly depressed.

This combination of measures had the effect of:

- (a) reducing national income;
- (b) encouraging the pursuit of staple expansion and
- (c) biasing expenditure in favour of import-intensive goods.

The overall result was that the economy adjusted to the possibilities of the new era less by developing self-reliance and more by staple diversification. As the long-run secular decline in the fortunes of staple production persisted from the pre-Emancipation period, the readiest adaptation seemed to be one of staple substitution. Hence sugar was displaced by cocoa, which in turn gave way to a revival of sugar before petroleum emerged ultimately to dominate the current account of the balance of payments of Trinidad.

Against this background, the significance of the Great Depression and the Second World War is that they enforced a delinking of the staple economy from its metropolitan connections. Staple surplus became more difficult either to achieve and/or to translate into an expansion of exports and a deepening of the conditions for their production (the corollary of which is the constriction of residentiary output). Moreover, national income earned in foreign exchange became more difficult to spend on imports owing to problems of effective supply. Inevitably, the impact was drastically to alter the range of options open to the domestic entrepreneur.

FOOTNOTES TO PART A

1. See Appendix C, Table 1.
2. Dudley Seers, "An Approach to the short-period analysis of primary producing economies". Revista de Ciencias Sociales, 1961.
3. Wassily Leontief et al., The Future of the World Economy, New York, 1977.
4. See for example, Immanuel Wallerstein, The Modern World System, New York, 1976; Samir Amin, Accumulation on a World Scale, 2 Vols., New York, 1974; and Andre Gunder Frank, World Accumulation, New York, 1978.
5. Dudley Seers, "The Limitations of the Special Case," printed in Kurt Martin and John Knapp, The Teaching of Development Economics, London, 1967.
6. For the concept of "Planter Government", see Lloyd Best, Government and Politics of the West Indies, Port Of Spain, 1969. The West Indian Colonial political system as a "Subordinate System" is treated in A. W. Singham, Hero and Crowd in a Colonial Polity, New Haven, 1969.
7. Sigmund Diamond, The Creation of Society in the New World, Chicago, 1963. In particular see "From Organization to Society: Virginia in the Seventeenth Century," p.6.
8. The corresponding "Model of Pure Plantation Economy", is to be found in Lloyd Best and Kari Levitt Externally-Propelled Growth and Industrialisation in the Caribbean, Montreal (multilith, 4 vols.), 1968. For an introduction, see, Lloyd Best, "Outline of a Model of Pure Plantation Economy", Social and Economic Studies, 17 (1968). A critical summary is available in "Voices from the Periphery", Chapter 5 of Harold Brookfield, Interdependent Development, London, 1975. Brookfield takes caricature for gimmick on p. 160.

B. MODIFICATION OR TRANSFORMATION?THE DEBATE PART ONE 1936 - 19491. The Economy in the Thirties:

By the time the Great Depression struck in 1930, the economy of Trinidad and Tobago had achieved a substantial measure of diversification of the plantation economy of the early 19th century. There now existed a rich variety of crops with sugar, cocoa and coconuts making major contributions to foreign earnings while citrus, coffee, bananas, and tonca beans served as minor export staples. Table I illustrates. In addition, the oil industry, which had begun crude production in 1909 and embraced refining in 1914, grew steadily before achieving its most rapid growth between 1934 and 1938 with output almost doubling in that five year period. As Table III shows, its contribution to employment, Government revenue and exports reduced substantially the relative importance of the planting sector and ushered in the era of the mineral (as against the agricultural) export staple. Support for petroleum was provided by asphalt the production of which stood at 105 thousand tons valued at \$314,000.00 in 1938.

This much more diversified economic structure was nevertheless externally led. The vast bulk of the agricultural and mineral output continued to be exported rather than to serve as the inputs into secondary or downstream processing, refining and elaboration. At the same time, the supply of consumer and capital goods was duly procured through importation from the metropolitan countries - a temporary excess of imports over exports in the late 30's being caused by an increased capitalisation of the petroleum sector which in time would require a corresponding outflow of income to be financed by export surplus. Despite the widening of the staple base, the traditional bias towards extreme export specialisation had survived the diversification.

2. The War Economy 1939 - 1945:

Following on the Depression, which had mostly reduced the level of activity and curtailed external trade, World War II now threatened to introduce changes in the actual character of the entire West Indian economy moreso in Trinidad and Tobago. Disruptions to and shortages in shipping not only engendered difficulties with the disposal of export staples but also limited the procuring of foreign provisions. Trinidad and Tobago in some ways constituted a special case. Oil resources and a strategic location selected it as a site for an American Base. A new type of military cum tourist staple created extensive new high-wage employment¹ and income in construction, installations and maintenance and added to the inflow of foreign exchange which was in any case being kept buoyant by negotiated export prices in spite of lowered agricultural output and by the inflated war demand for the products of the petroleum sector.

The response to enhanced national and private income combined, with the demonstration effect of the American presence, to induce a steep increase in overall spending. The partial insulation and delinking of the economy by the war, however prevented high staple earnings from being ritually translated into import demand. The fortunate consequence was that some productive resources tended to shift towards output for sale at home, notably food (rice, vegetables, ground provisions), manufactures (lard, matches, cigarettes, rum), and initiatives were stimulated in the provision of services including the repair and maintenance of machinery. By the end of the war the acreage of agricultural land developed to food production for the home market was 2 1/2 times the pre-war figure.

Moreover, the islands became virtually self-sufficient in a number of manufactured items. The transformation was so remarkable that an official Caribbean Commission Survey could identify the Trinidad and Tobago economy as "the most developed in the West Indies ...". Trinidad, it was claimed, "is at present both more industrialised and more diversified in its agriculture than either (British Guiana or Jamaica) ..."²

3. Industrial Profile and Possibilities in 1946:

A detailed picture of the manufacturing sector may be got from a study published by the Caribbean Commission.³ In response to a circular issued by the Secretary of State for the Colonies in 1941, a survey of secondary industries in Trinidad and Tobago was conducted in 1942/3. This survey indicated a wide variety of industries producing for the home and export markets, and using domestic and imported machinery and raw materials. A summary list is given Appendix A.

A few examples would however serve to illustrate the nature of these industries. Angostura Bitters with a capitalisation of \$1.25 m. employed 122 persons, had an output valued \$410,000., one-half of which was exported, and used local rum as the basic input. A carbon dioxide company used fuel oil and lubricants from the Trinidad Oil Industry, imported its requirement of soda ash and exported 50% of its output valued at \$91,000. Industrial Gases manufactured oxygen, nitrogen and Acetylene from imported chemicals, and sold most of its output locally. A private company manufactured matches, 86% of which was sold locally, from local wood and imported chemicals, and employed 112 people. Four or five companies produced lime and pulverised products from local limestone and crude oil. The sale of aerated waters by a number of large (capitalisation \$500,000) as well as small companies was based on sugar and carbonic acid bought locally and amounted to \$1.5 m. in 1942. There were two biscuit manufacturers and one brewery, the latter employing 99 persons and selling \$350,000. of output in 1942. One large cigarette factory employed 237 persons in 1942, using imported tobacco leaves. A number of small operators produced about \$150,000 of output of chocolate, cocoa powder and coffee from local materials mainly for the home and West Indian market. Two public companies, employing 335 workers, produced edible oil, coconut meal, soap, lard, margarine, coconut oil and candles, valued at over \$1.5m. in 1942. In addition enterprises sprung up producing jams and jellies.

This list confirms the existence of a residentiary sector, still essentially embryonic but clearly robust and above all, matching domestic raw materials and skills (supply) on the one hand with the needs of the home population (demand) on the other, the achievement being attributable to vigorous intervention and intermediation on the part of a rising class of small-scale and own-account managers and entrepreneurs.

By the standards of that era and against the large background of export specialisation, this class had created quite an extraordinary mutation in the inherited plantation economy. In addition, the oil refineries, though not yet oriented towards downstream linkages, were nevertheless handling an annual throughput of 21 million barrels (that is the entire domestic output of crude) and in consequence were delivering such products as fuel oils, motor spirits, etc. Still more, the long established sugar refineries and rum distilleries, if still content to ignore research into and development of new manufactured outputs from the cane, nevertheless survived in comparatively good health and employed some 4,000 workers out of a total of 38,000 for manufacturing as a whole.

4. Post-War Prospects:

In 1946, the prospect for the expansion of existing industries was good. As the Sub-Committee on Industries was to report in 1947, the promise was for a fair amount of activity in re-equipment with a number of establishments - both large and small - preparing plans for growth. The oil companies aimed to pursue further exploration just as soon as drilling equipment could be obtained and incentives for the development of new fields granted, and there was spare refinery capacity which could be used to refine imported crudes. Asphalt remained one of the best materials for surfacing roads and prospects were reasonably good. As agricultural output recovered, and oil drilling expanded, the demand for limestone products was expected to grow and stimulate its increased output. There were good prospects for the development of roofing tiles from Trinidad clays, though the expansion of brick production could only accompany expansion of the construction industry. The foundry industries and the production of steel drums for the oil and asphalt industries as well as the output of industrial gases were all expected to expand. It was also considered that, with improvements in equipment and processes, the timber industries and the tanneries would both expand, while citrus was already expanding and there was need for more rice mills. Production of biscuits was expected to grow and sweet and fancy biscuits added to the range of output. The expansion prospects for drink and tobacco were thought to be good, internationally for Angostura Bitters and locally for beer, aerated waters, rice, and there were well advanced plans to expand the existing brewery and establish a new one. The manufacture of shirts was growing and expectations were that production and sales could increase by 50% in the next decade. It was also considered that furniture manufacture, which already employed over 600 persons enjoyed a sufficient supply of good raw materials and market potential for the chances of expansion to be regarded with a certain optimism.

There were also prospects for establishing altogether new industries based on the supply of raw materials, the skills of the population, power from oil and gas, and the needs of the domestic, regional and international markets. Sugar cane, cocoa and coconut promised to provide a raw material base for a range of industrial products: paper, board, resins, pharmaceuticals, and fibre based products. The timbers of the forests and the rubber (Trinidad exported 400,000 lbs. of raw rubber per year during the War), the sands and clays for glass and pottery, limestone for cement, were all possibilities. The relatively abundant availability of oil in 1946 (when Trinidad was the main producer in the British Commonwealth) offered an almost unique opportunity for the industry of a kind where domestic fuel was critical for success.

Another indicator of the industrial potential of Trinidad and Tobago in 1946 is the availability of skilled manpower. Table III shows the occupation structure of the economy in 1931, when it was still largely agricultural, and in 1946 when only one-quarter of the gainfully employed remained in agriculture. In the latter year there were 1,201 persons classified as owners, officials and managers, 983 as foremen and testers. However there were already 18,483 mechanical artisans including 5,452 mechanics and repairmen, 1,522 electricians and wiremen, and 5,599 factory tradesmen of various sorts. In addition there were 4,723 general artisans, including 468 blacksmiths, 2,314 plumbers and pipefitters, and 199 sheet workers and tinsmiths. In addition to the industrial discipline of centuries of large scale Caribbean manufacturing of sugar, there evidently occurred a great deal of on-the-job training here, and later on in the oil industry as well. By 1946 there was also a formal system of training for artisans,

there being seven vocational training centres with 1500 students, and in that year of 174 entrants for the City and Guild examinations, 106 were successful. Some of the oil companies were also operating their own apprentice training schemes. Of the 15,000 persons unemployed in 1946, there were blacksmiths, mechanics, masons, electricians, painters and plumbers.

Prospects for the elimination of unemployment seemed reassuringly optimistic. The Industrial Survey Report was only lukewarm in respect of the feasibility of such new manufactures as paper, sugar bags, rubber goods, cocoa butter and caustic soda; it was wary about import-replacing industries based on imported raw materials and displayed enthusiasm only where ventures involved established enterprises such as the Portland Cement Company. Yet, the full picture permitted the remark that "a comparatively small expansion of secondary industries might rapidly absorb the greater part of the (15,000 unemployed) in direct and indirect employment."⁴ The modification of the economy was promising more than a mutation. Would industrial policy henceforth opt for an enduring transformation?

5. Post War Theory, Policy and Strategy:

The key to an understanding of post-war policies of industrialisation in the Caribbean, and specifically in Trinidad and Tobago, must be sought in the challenge made to the official view by England-based West Indian economist W. Arthur Lewis in a debate which extended from 1939 to 1950. The old colonial policy, informed by mercantilist principles, inhibited, if it did not altogether proscribe, the development of secondary industry in the colonies. This view is evident in the reports of the Royal Commissions of 1896 and 1938,⁵ is enshrined in the neo-mercantilist Ricardian ideology of comparative advantage, and is given effect through such institutional arrangements as differential import duties on raw and processed goods, imperial preference, and such colonial monetary arrangements as were subsumed in the Sterling Exchange Standard. Writing in 1939, Lewis had concluded that industrialisation was the policy which seemed to offer most hope of permanent success, and that the West Indies should follow in the footsteps of other agricultural countries setting up factories for refining sugar, making chocolate, utilizing copra, making dairy products etc.⁶

In the context of the times, this was an extremely radical, if not revolutionary proposal, directly at variance with the Muscovado Bias of the Pure Plantation Economy. The publication of "A Ten Year Plan for Jamaica" by Dr. F. Benham, the Economic Adviser to the Comptroller for Development and Welfare in the West Indies, reflected official policy and assigned only a minimal role to industry. This prompted the Lewis critique of the plan, published in Agenda, December 1943. Lewis challenged a number of the assumptions of official policy. In particular, he insisted on the ability of the West Indian workers to man industry at competitively high levels of productivity. His criticisms were duly answered in an unpublished memorandum for the Jamaica Policy Committee, but in 1948 Lewis pushed the debate further when, in a memorandum prepared for the Colonial Economic Advisory Committee, he and Mr. F. V. Meyer proposed the manufacture in Jamaica of domestic utensils and other hollow-ware and hardware from imported sheet metal.

A full statement of the official policy appeared with the publication of the Industrial Survey Panel Report in 1948.⁷ As already noted, the Report describes a situation where the region, on account of its resources, skills, World War II experience and market prospects, seemed poised for an industrial take-off. Quotations from the report illustrate:

"During the present economic crisis there is a tendency to restrict imports by direct prohibition, control measures doing what in wartime was effected by want of shipping and other difficulties. If this tendency continues, local industries must continue to expand as they did during the war to meet the requirements of the territories." (p. 14, Vol I)

Nor was there a lack of optimism in regard to the availability of markets. In his Report for 1945-46 the Comptroller for Development and Welfare stated that "reasonable opinion today is much more optimistic than was the Royal Commission about the prospects of increased industrial development within the area. The war, in forcing the territories to rely much more upon themselves, and in increasing permanently or for a long period to come, the world demand for such products as bauxite, oil, veneers, and plywood, sugar and oils, has made a change. There seem to be markets waiting for the products of industrial expansion in the British West Indies." (p. 15, Vol. I)

And yet, in the final analysis, the conclusion of the Report is decidedly pessimistic.

"The discussion of supply factors suggested that industrialisation has been limited in the past by inadequacy of power, of capital and of labour skills. The discussion of demand factors indicated the limiting effect of small local markets and inability to compete in large markets with European and American industries. Development in the future cannot escape the same limitations." (p. 234, Vol. II)

This curious ambivalence of the official position seems to derive from two sources, viz. its view of colonial man, and its conception of the wider Commonwealth interest to which it necessarily had to award priority of place. Although the Report concedes that Caribbean workers "do not seem to have much difficulty in adjusting themselves to high-speed machines in cigarette factories, shirt factories, shoe factories or canning plants"⁸ and that "figures for productivity per man-hour commonly reveal significant differences in power and machinery used rather than skill, strength and willingness of the workers"⁹ it nevertheless argued that climate, nutrition, social organization and temperament are factors which affect the productivity of the West Indian workers. While factories could be air-conditioned and diets improved, "the social organisation prevailing among the workers of African descent" seems to influence the temperament of the West Indian worker making him "easy-going, unambitious and casual".¹⁰

The needs of neo-mercantilist industrialisation policies, however, seemed dominant if we are to judge by the following interpretation:

"The British Caribbean territories in general have not had to watch their balance of payments with care because their currencies are linked to sterling reserves ... colonial territories also need to reduce imports as well as expand exports, and to refrain from paying dollars for anything that can be produced by themselves or in other parts of the Commonwealth". And when the world returns to a "healthy organisation of production and trade ... the principle of comparative advantage should weigh more in determining long term policy than an assumption that industrial production is preferable to agricultural production ... or that one's own manufactures are preferable to other people's merely because they are one's own".¹¹

In other words, while the industrial potential of the West Indies could not be denied by imperial policy makers, it was to be tapped only to meet the short-term needs of the Sterling Area. In the long run, the interests of the Caribbean colonies were relegated to a place below those of the British Commonwealth as a whole and inevitably therefore, below those of the metropolitan centre.

It is this debate which Lewis brought to a head in a series of articles in 1949 and 1950.¹² To Lewis "The case for rapid industrialisation in the West Indies rests chiefly on over-population". Agriculture could not absorb more people, but populations were growing at 1.5 to 2.0 per cent per annum, and already there was a density of 294 compared to his estimated carrying capacity of 60 per square mile. Moreover agriculture had been shedding labour and it was expected that employment per acre would decline further. It followed that "agriculture ... will yield a decent standard of living only if numbers engaged in it are drastically reduced ... creation of new industries is an essential part of a programme for agricultural improvement".¹³ Hence industry was not an alternative but a necessary complement to agriculture.

Lewis carefully drew up a West Indian employment budget showing the minimum demand and likely supply of jobs over the ten years 1950 to 1960.

<u>Minimum Demand for Jobs</u>		<u>Anticipated Supply of Jobs</u>	
Back log of Unemployment	140,000	Emigration to British Honduras	
Population Increase	149,000	+ British Guiana	25,000
Job Destruction in Sugar	74,000	Tourism	20,000
Surplus Labour in Domestic Services	50,000	Industry	120,000
		Induced Employment	248,000
	<u>413,000</u>		<u>413,000</u>

However the entire regional market could support only 26,000 jobs in industry if all manufactured imports were replaced by home manufactures, and this was only a small fraction of the 120,000 jobs needed in industry. Moreover, industrialisation "is a frightfully expensive business beyond the resources of the islands ... to provide employment for 100,000 persons calls for an investment in manufacturing alone of something like £130,000,000".¹⁴ The need for capital, market connections, technical and managerial know-how led to the conclusion that "the islands cannot be industrialised to anything like the extent that is necessary without a considerable inflow of foreign capital and capitalists, and a period of wooing and fawning upon such people".¹⁵

Lewis was of the view that foreign capital was much less dangerous in manufacturing than in mining and agriculture. At any rate the strategy would, in time, lead to a West Indian owned manufacturing sector, for as national income increased, "if the local people are thrifty, they can build up savings which in due course enable them, having learnt the tricks of the trade, to set up in business themselves".¹⁶

There was, however, the problem of how to get the process started. For this he drew on the experience of neighbouring Puerto Rico, whose experience in establishing light industry in the 1940's he had studied. Low efficiency wages would attract branch plants of metropolitan manufacturing enterprises engaged in labour-intensive activities as had happened in the case of Puerto Rico. A series of practical steps are then spelled out. These included formation of a Customs Union and a single federal administration to integrate markets and unify economic policy; the establishment of a single Industrial Development Corporation, with offices in London and New York, generous budgets and freedom from red tape; industrial estates and factory shells were to be built; an Industrial Development Bank established to lend financial support to industry; protection was mooted for the local market; and tax concessions proposed in order to raise the after-tax profitability of investors.

Lewis had advocated an entire apparatus for harnessing the cheap labour of the West Indies for producing manufactures for export. Labour was to be a new "quasi-staple" which was being exported.¹⁷

The theoretical underpinnings of the strategy were presented in his celebrated "unlimited supplies" model.¹⁸ In Ricardian style, Lewis assumed that the economies under discussion comprised a large traditional non-capital using sector generating no surplus, and a small modern sector using capital to produce secondary goods. The marginal productivity of labour in the traditional sector is zero, and this gives rise to a perfectly elastic supply of labour to the modern sector at the subsistence wage. There being zero opportunity cost of labour in the traditional sector, it followed that the growth of the economy, measured as growth in income per head would take place as labour was transferred from the traditional to the modern sector, the output of the latter sector growing accordingly. Growth in the modern sector would depend on capital accumulation through the re-investment of surpluses. In the course of time, the surplus labour in the traditional sector would be eliminated, and growth would now depend on increases in productivity more so in the traditional sector which would now become more mechanised and capitalised. Through the mechanisms of the circular flow of incomes, variations in the terms of trade, and the free flow of resources, the two sectors would become fully integrated as the rate of profit was equalised between them. Thus a small manufacturing sector would serve to generate growth, modernisation and integration of a hitherto traditional economy.

Although the conditions of Ricardo's England differed so greatly from those in the Caribbean, this model of industrialisation, when transposed, seems nevertheless to fit. It seemed enough to assume that an effective entrepreneurial dynamic could in the first instance be injected into the staple economy from abroad so correcting any deficiency in capital, know-how and markets. Here, the theory of the 1950's provided an abiding legitimisation for the practical measures proposed in the more heated climate of the 1930's and 40's. The emerging political elites in the West Indies (and further afield in the multitude of new states that were coming into existence) would be able to pursue an industrial strategy admirably adapted to the economies which the colonial administration had re-opened to imports after the war. With the buoyant staple earnings, they would proceed with vigour where their predecessors merely moved with caution.

The impact of the Lewis strategy on policy was widespread. A measure of encouragement to the development of hotels and industry had been given in Jamaica by the Hotels Aid Law (1944) and the Pioneer Industries (Encouragement) Law of 1949¹⁹, and the Hotel Development Ordinance of Trinidad and Tobago (1946) which was extended to other industries in 1950 by the Aid to Pioneer Industries and the Income Tax (In Aid of Industry) Ordinance.²⁰ But the full range of Lewis' recommendations were to be enacted throughout the islands in anticipation of the formation of the Federation, and following on the Jamaica and Tobago legislation. By 1958 all the ten participating territories of the West Indies had enacted Pioneer Industries Ordinances granting tax holidays to pioneer firms and their Customs Ordinances were amended to permit duty free imports of equipment and raw materials.²¹ Industrial Development Corporations were also established in Jamaica (1952), Antigua (1953), Barbados (1956), and Trinidad + Tobago (1959). Lewis was also instrumental in drafting the first development plan (1958 - 1962) for Trinidad and Tobago, and served as Special Adviser to the Prime Minister of the West Indies Federation (1961). His influence was also felt throughout the Third World

by the impact which his "unlimited supplies" model had on economic thought in a period of de-colonisation, and directly through his service as Consultant to the United Nations Economic Commission for Asia and the Far East (1952), the Government of the Gold Coast (1953), the Government of Western Nigeria (1955) and to the Prime Minister of Ghana (1957-1958).

The paradox here was that in reacting to the neo-mercantilist bias of the colonial administration (with its tinge of racial and cultural prejudice), indigenous theory and policy shifted unwittingly from an emphasis on a resource-led strategy to one that was frankly by taste. The prior necessity was to establish not simply that industrialisation was an imperative of economic viability but that the colonial population was fully capable of coping with any conceivable brand of activity whether import substitution entailed a far-reaching displacement or a mere import-replacement.

The unfortunate result of the need to establish the colonial capability for industrialisation to find legitimisation in the world of metropolitan economic theory was a certain loss of realism.

The Ricardian model disguised the fact that, in the case of the West Indies for example, it is the "traditional" small-scale and labour-intensive sector and not the "modern" large-scale and capital-intensive sector which had been the source of innovation and dynamism - a fact to which Lewis was perhaps to become more alert in the 1960's.²² The modern sector had been a locus of lifeless once-for-all technology transfer; the own-account artisan sector had become a restless seeker after accumulation and technical progress having come into being only when the slave-export sector fell into maturity and decline.

In this context, the notion of traditional versus modern sectors has proved a seminal confusion. Failure to seize the more critical difference between "staple" and "residential" activity was to result in the sacrifice on the altar of foreign investment of an extremely dynamic class of national managers and entrepreneurs. An associated error was to be a misprojection of the savings-effect of increased national income. As the own-account class collapsed, wages and salaries came to constitute the lion's share of incremental income and inevitably the propensity to consume and to import was to remain high and even to increase.

The ultimate paradox therefore was to be the vindication by the post-colonial performance of the pessimism voiced by pre-independence administrators in regard to the industrialisation prospects. In its introductory summary, the 1948 report, in a prophetic passage, clearly identified the risks of externally-propelled industrialisation:

"When industries paying good wages and holding out the prospect of regular work throughout the year, together with urban amenities, draw workers to the towns, the unemployment becomes manifest. The wages paid are spent largely on articles that cannot be, or are not, manufactured in the territory ... wheat flour and cotton piece goods ... wages paid go into circulation and generate further incomes ... The effect of new industries in enlarging the demand for imports will be all the more marked if the working capital is derived from abroad ... there is no local saving to balance it and reduce the money spent upon consumption ... So industrial development can in theory lead to even larger numbers unemployed and even more adverse trade balances".²³

FOOTNOTES TO PART B

1. At its peak in 1942-3, construction and installations engaged 28,000 to 30,000 persons directly and as late as December 1944 there were 9,000 engaged in maintenance. See A. R. Prest: War Economics of Primary Producing Countries, Cambridge Univeristy Press 1948, pp. 263/282.
2. Industrial Development in the British Territories of the Caribbean, Report prepared by the British Member of the Industrial Survey Panel appointed by the Caribbean Commission, 1948 (R. Gallotti), 3 Volumes, pp. 11/12, Volume I.
3. Op. cit.
4. Ibid, p. 89, Vol. I.
5. See Report of the West India Royal Commission, C8655, 1897, p. 2, para. 13; West India Royal Commission Report, Cmd. 6607, 1945, pp. 443/4, para. 46.
6. W. Arthur Lewis: Labour in the West Indies: The Birth of a Workers' Movement, Fabian Pamphlet, 1939, New Beacon.
7. Op. cit.
8. Op. cit. p. 112, Vol. I.
9. Op. cit.
10. Op. cit. p. 116, Vol. I. By contrast, the Report adds "East Indians have brought with them from India traditions of family solidarity, thrift and responsibility. The descendents of the slaves have no such traditions".
11. Op. cit. pp. 29/30, Vol. I.
12. W. A. Lewis: Industrial Development in the Caribbean, Caribbean Commission, 1951, Reprinted from Caribbean Economic Review, Vol. I, December 1949 and Vol. II, May 1950.
13. Ibid. p. 30.
14. Ibid. p. 56
15. Ibid.
16. Ibid., pp. 56/57.
17. See L. Best and K. Levitt: Post-war Economic Thought in the Caribbean, (Mimeo).
18. W. Arthur Lewis: "Economic Development with Unlimited Supplies of Labour", Manchester School, 1954.
19. Dennis McFarlane: A Comparative Study of Incentive Legislation in the Leeward Islands, Windward Islands, Barbados and Jamaica (1964).
20. Economic Commission for Latin America: Draft Report on Harmonisation of Tax Incentives to Industries in Carifta Territories, ECLA/POS69/10.
21. Eric Armstrong: Incentive Legislation in Trinidad and Tobago, Institute of Social and Economic Research, University of the West Indies, Jamaica (1967).
22. See Gisela Eisner: Jamaica 1830 - 1930 (with foreword by W. Arthur Lewis).
23. Industrial Development in The British Territories of The Caribbean. Op. cit. p. 13, Vol. I.

APPENDIX B 1

List of Industries in Operation in Trinidad in 1942/3:Part I: Large Scale Secondary Industries Manufacturing Goods Both for the Domestic Market and for Export:

Angostura Bitters
 Carbon Dioxide Manufacture
 Industrial Gases
 Matches
 Lime and Limestone

Part II: Secondary Industries of an Advanced Kind Producing Goods for Local Consumption but not to any Substantial Extent for Export1. Food, Drink and Tobacco

Aerated Waters	Coconut Oil (Edible)	Ice Cream
Beer	Coconut Meal (animal food)	Jams and Jellies
Biscuits	Confectionery (Sweets)	Lard and Lard substitute
Bread	Grape fruit (canning)	Liqueurs
Chocolate + Cocoa Powder	Ice	Margarine
Cigars		Pipe Mixtures
Cigarettes		Stout
Coffee		Wines

2. Clothing and Footwear

Alpargatas (sandals)	Hats	Suits
Dresses	Pyjamas	Underclothing
	Shirts	

3. Household Equipment

Candles	Mattresses	Washing Soda
Furniture	Soap	

4. Medicines, Toilet Preparations, etc.

Alcohol	Medicinal Preparations	Perfumed Spirits
Bay Rum	Methylated Spirits	Toilet Preparations
Herbal Extracts		

5. General Industries

Acetylene	General Engineering	Steel Barges
Boats + Launches	Laundries	Steel Drums
Book-binding	Motor Car Repairing	Storage Tanks
Bricks	Oxygen	Tanneries
Building	Packages	Tombstones
Clay Products	Printing	Tyre Repairing (re-treading and vulcanizing)
Concrete Products	Saw-milling	

Part III: Minor Industries and Crafts Conducted Principally in the Homes of the Workers:

Basketry	Dress-making	Pottery
Boots and Shoes	Engraving Gold and Silver Work	Preserves (fruits, chutneys, sauces)
Brooms and Brush making	Jewellery	Tinware
Charcoal Burning	Lampshades	
Coconut Fibre	Barrels	
Mats	Novelties (including wooden toys)	

Source: Industrial Development in the British Territories of the Caribbean,
Vol. II, pp. 10/11.

APPENDIX B 2

Table I: The Extent of Agricultural Diversification in the Trinidad and Tobago Economy

	<u>. 1934</u>	<u>. 1935</u>	<u>. 1936</u>	<u>. 1937</u>	<u>. 1938</u>
<u>Cocoa</u> - Value of Crop: \$ '000	1,678	2,531	2,340	3,087	2,369
Exports: Million lbs.	26.8	44.4	28.3	26.3	42.4
<u>Sugar</u> - Production: tons '000	105	118	155	154	134
Exports \$ '000	-	4,693	6,426	6,426	5,157
<u>Coconuts</u> - Exports: Million Nuts	65	32	33	58	32
<u>Grapefruit</u> - Exports: Crates '000	17	50	43	46	n. a.
<u>Lime Oil</u> - Exports \$ '000	120	74	92	231	118
<u>Coffee</u> - Exports: lbs. '000	525	1,188	1,213	n.a.	n.a.
: Value \$ '000	n.a.	n.a.	84	135	41
<u>Bananas</u> - Exports: Bunches	33	66	159	158	81
<u>Tonca Beans</u> - Exports \$ '000	71	59	145	104	84
<hr/>					
Domestic Exports (Total) f.o.b. \$'000	22,237	22,755	26,935	31,530	33,742
Imports (Total) c.i.f. \$'000	21,534	20,966	27,188	35,836	35,497
<hr/>					
Government Revenue \$'000	8,210	8,693	12,560	12,252	13,445
of which Customs & Excise	4,555	4,938	5,406	6,821	7,061
Government Expenditure \$'000	8,190	8,683	9,171	10,356	12,230

Source: Blue Book - Various Issues

Table II: Selected Statistics on the Oil Industry of Trinidad

	<u>1933</u>	<u>. 1938</u>	<u>. 1940</u>	<u>. 1945</u>	<u>. 1946</u>
Crude Oil Production Barrells '000	9,318	17,542	21,862	21,021	20,173
Footage Drilled '000	233	854	995	452	524
Total Employment	6,440	14,952	13,493	13,796	14,651
Contribution to Government Revenue \$ million	1.6	3.7	5.3	6.9	6.6
Value of Exports \$ million	10.8	23.6	33.6	43.6	41.5

APPENDIX B2Table III: The Distribution of Employment in Trinidad & Tobago

	<u>1931</u>	<u>1946</u>
Agriculture	78,606	53,846 (25%)
Manufacturing (including sugar)	30,852	37,888 (18%)
Construction/Building	1,324	26,612 (10%)
Personal Services (Including domestic service)	24,049	22,565 (10%)
Government/Public Services (including Armed Forces)	4,613	17,565 (8%)
Commerce and Finance	-	18,842 (9%)
Transport and Communications	-	12,780 (6%)
Mining	891	-
Unemployed	-	15,241 (7%)

Source: Census of Population 1946

C. THE PROMOTION OF MANUFACTURING 1950-19731. The Impact of Industrialization

The passing in 1950 of the Aid to Pioneer Industries Ordinance marked the opening of perhaps a full quarter of a century during which economic viability became virtually synonymous with the spread of activity in the manufacturing sector. It was undoubtedly a period of developing hope, hope due partly to the fact that Trinidad and Tobago had drawn deeply on its own resources - as on its own resourcefulness - to weather the adversities of depression followed swiftly by war. And now, with the return of peace, the population was young with no fewer than half of the 600,000 falling between the ages of 20 and 44¹. In the setting, growth and development seemed to be the natural order of things.

Hope therefore found an easy inspiration in the feeling that the Government had taken an appropriate measure in enacting a set of incentives to the burgeoning of industry. The 1950's did not have the advantage of 1975 hindsight; nor as yet did those years have any keen appreciation of the adjustments made in the 1930's and 1940's. Indeed, even the experience of a promise which had consistently and from the beginning been subverted by the staple sector had not evolved into a clear theory of development and underdevelopment. There existed little basis for gauging the feasibility or for checking the internal consistency of the programme.

It seemed that home supply could be activated even in agriculture. Arthur Lewis had argued that Trinidad, almost unique among West Indian territories, enjoyed a comparatively low density of population - only 282 persons to the square mile². And then all of the islands could draw on the Puerto Rican example; many missing resources for production could be secured from abroad. The American bases had finally demobilized their labour. Why could not the industrialization begin in this island with the generation of much needed employment and income? In other words, positive results were anticipated from the implanting of a dynamic new manufacturing sector. In 1949, the Shaw Committee had recommended incentive legislation for the purpose. Now both domestic and foreign entrepreneurs would be encouraged by a variety of fiscal and other inducements.

In the very year of the Ordinance, 23 enterprises representing 11 activities were granted pioneer status³. The output effect of the legislation was of course not quite so immediate but the programme had started on a path of which the first decade would witness a growth in pioneer enterprises to 106. Indeed this first decade of promotion was without question one of rapid expansion.

All the relevant aggregates presented in the following table reflect an extended post-war boom with real G.D.P. at market prices increasing at an average annual rate of 11% an advance of 121% for the period 1951-61.

Corresponding figures for National Income were 8% and 88% respectively.

Output and Income, 1951 and 1961 (constant prices, 1960)

G.D.P. (factor cost)	1951	1961	Percentage Increase 51 - 61	Approximate Growth Rate
	\$m.	Tt.		
G.D.P. (factor cost)	435	937	115	10.4
G.D.P. (market prices)	420	930	121	11.0
G.N.P. (market prices)	415	807	94	8.5
National Income	380	715	88	8.0

Source: Frank Rampersad, Growth and Structural Change, C.S.O. Research Papers December 1965.

This performance was marked by a constant 10% real contribution to G.D.P. by the manufacturing sector, while agriculture fell from 17% to 12%. Petroleum led the process, increasing its contribution from 29% to 32%⁴. The overwhelming predominance of the mineral staple and the high rate of growth made it difficult to judge how dynamic a role manufacturing was playing in bringing about actual structural change.

The sector grew by 9% per annum but failed to capture any larger share of total supply⁵. Indeed the ratio of imports to domestic product had risen from 58% to 61% between 1951 and 1960, sign of a still prevalent import bias⁶. Given the need for increased provisioning, tooling and equipping of the expanding economy, however, manufacturing could only be a two-edged sword.

It was not until the second decade that the role of the sector to some extent began to clear.

Now instead of strong, steady growth the economy experienced a series of fluctuations in the rhythm of its activity. The boom which had fuelled a 10% growth-rate from 1955-61 tapered off thereafter and slowed to between 3% and 3 1/2% from 1962 to 1965 before it once again revived to a level of 6-7% over the period 1966 to 1968⁷. The truth is that the overall growth rate, here again, was closely correlated to the production of crude petroleum which rose at rather more than 10% per year in the periods of upswing but tailed off to less than 2% during the intervening downswing.

The mining sector not only slowed in the second decade but also lost 3% of its share in G.D.P. The other potential source of industrial inputs, agriculture, also suffered a pronounced decline. In fact, the sector persisted in a long-term declining trend, with domestic product originating there falling from 11% in 1962 to 8% in 1968, barely half of what it had been in the early 1950's and by 1974, that 1962 percentage was once again to be halved.

Against this background of a sluggish primary performance, the rise in the share of manufacturing from 13% to 18% on the face of it constituted a paradox⁸. The big jump is to be explained, however, partly by a change in the definition of manufacturing to include activity previously accounted for by (downstream) mining, partly by the movement of relative prices and above all, partly by the clear drift of the sector towards import-intensive replacement. Increasingly a large-scale industrial diversification was becoming possible without the direct participation of domestic material resources. The chief limit on expansion was the twin of consumer demand plus import capacity provided either by foreign exchange earnings on current account above the line or capital inflows below.

That the industrial programme would weigh heavily on the balance of payments had been appreciated from the outset. Factor services - know-how, capital, management and enterprise would all involve disbursements as would the procural of raw materials and equipment. On the earnings side, industry was expected to find outlets in markets already serviced by investors so that it counted on generating at least part of its own claim on the national capacity to import. Yet the emerging structure of trade and payments occasioned a certain surprise.

So far as trade is concerned two related features of the period stand out. The first is that, in pursuing import substitution, the economy seems to have acquired a permanent incapacity to reverse its traditional import-bias while the second is the continuing extra-regional focus of trade modified qualitatively by CARICOM.

Import Bias and Limited Structural Interdependence

Import substitution has meant import replacement rather than import displacement, sustaining the import demand of manufacturing. When therefore the import (to G.D.P.) ratio fell between 1963 and 1967, that proved a highly untypical development. Hence, from a share of 58.2% in 1951, imports moved up to 64.5% in 1961 and then to 66.9% in 1971⁹. Not surprisingly, the aggregate deficit on visible trade amounted to \$405m for 1951-61, stayed negative at \$85m. from 1962-74 after which it was transported into the realm of surplus by the sudden hiking of oil prices¹⁰.

Imports and G.D.P. at Market Prices,
Trinidad and Tobago for Selected Years (1960 prices)\$m.TT.

<u>Year</u>	<u>Imports</u> <u>\$m. T.T.</u>	<u>% Change</u>	<u>G.D.P.</u> <u>\$m.T.T.</u>	<u>% Change</u>	<u>Import</u> <u>G.D.P. Ratio</u>	<u>% Change</u>
1951	264	-	453	-	58.2	-
1961	637	144	988	118	64.5	1.20
1971	943	48	1409	43	66.9	1.12
1951-72	-	257	-	211	-	1.22

The picture is confirmed by the data on the Import/G.D.P. ratio and on the elasticity of imports with regard to changes in G.D.P. which, throughout the period 1951-71, stood higher than one.

In the context of a general sluggishness of domestic supply, clearly the demand for food and manufactures has been responding to increasing real incomes. The import bias has however been aggravated by the new activities themselves. The huge majority of the respondents to a survey of 35 pioneer or assisted establishments admitted to importing, on grounds of both availability and cost, more than 70% of their raw materials¹¹. The effect has been both an increase over time of "pioneer" imports and a rise in their share of total imports - from less than 4% in 1957 to more than 8% in 1963¹². These new manufactures have therefore been contributors to a considerable import dependency on the part of all the major economic aggregates. Some data on these for 1951-61 are given in Table 3f.

The corollary of high import dependency is of course a limited degree of inter-industrial interdependence. Although Hirschman's concepts had not yet been articulated, early programming in the West Indies did appreciate that growth would develop the economy only if expansion resulted in creating linkages forward to home markets and particularly backward to domestic resources.

An interindustrial study is available for 1962 and therefore presents a view of the structure which emerged from the first 10 years under study. The relevant Table is presented in Tables 3e and 3f. What is most striking is the extent to which the petroleum sector remained essentially on the margin of the economy, having little more than a financial connexion with the Treasury of the State.

On the production side, the non-oil activity contributing most to that sector was Distribution with a co-efficient of 0.0155. Transportation is next with 0.0081 which compared with 0.4 for imports (foreign industry). The latter's contribution indeed was 25 times that of its highest domestic competitor, 80 times that of domestic Manufacturing and nearly 10 times that of domestic industry as a whole.

Much the same results flow from the side of consumption, where Transport tops the list with a co-efficient of 0.0103 followed by Manufacturing with 0.0066. With 0.6, export demand (foreign industry) accounted for nearly 60 times the highest home contribution, more than 90 times home Manufacturing and nearly 20 times home industry overall.

In a very real sense Trinidad and Tobago appears to have served a mere locus of mineral staple extraction for petroleum corporations. The sector's attitude to the development of downstream operations has simply provided a repeat of the performance of the Caribbean sugar industry over the centuries. But if sugar enjoys a considerable number of unexploited by-products, potential petroleum outputs are by comparison legion, a few hundred at least having been listed. It is a phenomenal indictment of the post-war programme that this, the most golden promise of all, never even approached let alone entered the scheme of industrial development until more than 20 years of un-organic expansion had compounded the difficulties of a residentiary approach against the background of a staple history.

The interindustrial matrix of Pure Plantation Economy concentrates its transactions along the main diagonal ruling out linkages altogether. In the real world case of contemporary Trinidad and Tobago, the minuscule co-efficients of interdependence therefore evoke no particular astonishment. A substantial number of the cells record figures of less than 1% and indeed almost half of the cells are blank. The author himself observes "a low-level of inter-industry relations and a fairly heavy dependence on imports"¹³.

In its first flush, industrialization by invitation, as it has come to be termed in the Caribbean, produced, it seems, only first-order change - a new pattern in the industrial origin of domestic product. The structural foundations of the economy remained unaltered. For the period since 1962, only indirect evidence is available, the most suggestive intelligence being that the onset in 1973 of a new international regime in petroleum witnessed a wholesale revision of public policy towards downstream operations in petroleum - a sign that not much had been modified over requirements in the case of all major industries exceeded 25% of total purchases. There is little reason to believe that the position has been significantly altered in the subsequent period - at least not up to 1974.

The Market-Focus of External Trade:

At first continuity seems to have been the theme not merely in regard to the structure of production at home but also in respect of the structure of trade with other countries. A heavy concentration of both import and export activity in the markets of the North Atlantic has from the start been inherent in the terms of incorporation of the Caribbean territories in overseas commerce. Provisions and equipment have traditionally been exchanged for the staples needed for industrial expansion. The pattern of recurring staple-substitution has therefore never seriously threatened the main lines of linkage except to the extent that petroleum has recently imposed its own peculiarities. Thus imports from the United Kingdom, United States, Canada and the British Commonwealth amounted to 42% in 1962 and 38% in 1973 while the corresponding figures for exports were 64% and 71%. On the import side however, the high figure for the rest of the world is almost completely accounted for by Western Europe and by the suppliers of crude oil to refining activity.

This peculiarity of petroleum as perhaps the most critical input into Atlantic-style industry has also altered the content of Caribbean trade in that Trinidad and Tobago's sale of the staple to the region has never been less than 1/3 of its total exports to the same destination¹⁴.

A far more interesting development, however, has been the change which manufacturing activity seems to have been making in the conventional pattern.

The signal for manufacturing trade to appear in the region was not the Customs Union advocated in the early days of the debate, but the Free Trade Area which was established 20 years later in 1968 and which was succeeded in 1973 by the Caribbean Community (CARICOM), the latter adding to free trade a common external tariff and a harmonisation of fiscal incentives. In other words, regional marketing came as an adjustment to the problems created by two decades of insular import replacement.

This demand or market-led strategy naturally gave an advantage to Jamaica and Trinidad with their larger incomes and populations and in the latter case, with more consistently buoyant staple earnings. By the same token it gave a lower priority to the possibilities of production-integration which Lewis had pointed to inter alia and which later proposals defined in terms of resource-combining and export-substituting programmes¹⁵. On the whole the inspiration drew on the notion of comparative advantage and the related options for trade creation and trade diversion on the good ground that the members of CARICOM do constitute in some ways one welfare group enjoying - if they wish to use them - regional instruments (such as the Caribbean Development Bank and the special provisions for the smaller countries) for equalising the benefits of regional industrial programming.

However, neither Lewis's joint development agency nor any form of industrial programming has as yet come into existence.

In spite of the shift from the functional co-operation of CARIFTA to the more formal harmonisation of CARICOM, industry has often advanced by duplicating capacity - aiming at captive insular markets and hoping to gain economies from regional exports. The result seems to have been chronic spare. Viability has therefore depended on a continued promotion of demand for and/or a continued sheltering of supply of excessively high-cost goods. To the extent that foreign-exchange has been pre-empted in this way, a long-term dependency on imports is being perpetuated in the economy at the expense of the development of residentiary activity better able to survive a secular decline in staple earnings.

Put another way, the assessment to be made of the changed pattern of Caribbean trade on manufacturing account would depend on our estimate of the chances for a new international economy under which export earnings could be sustained in the long run. But there can be no doubt that CARICOM supports something of a new industrial regime in the bigger territories of the region, and above all, in Trinidad and Tobago.

From Table 6g, it can be seen that 43% of the country's exports to CARICOM in 1972 were manufactures and that 42% of its manufactures to the whole world were to CARICOM destinations. At the same time, Trinidad is not a significant exporter of manufactures. In 1972 only 12% of its total exports fell into that category. Nor is CARICOM quantitatively significant in overall Trinidad trade. Only 11% of its total exports went to and 3% of its total imports came from the region.

In other words the value of CARICOM to Trinidad and Tobago is that such manufactures as the country does export depend heavily on the regional market in that such exporting as is done to the regional market, petroleum apart, is concentrated in manufacturing. When it is

taken into account that, with more than half (52%) of the total regional trade in manufactures, the country enjoys the largest single share, it becomes difficult to resist the conclusion regarding its dependence upon CARICOM. If it is also acknowledged that a high proportion of Trinidad and Tobago's imports from CARICOM - 42% - consist of manufactures, then this picture of dependence broadens immediately into one of interdependence.

2. The Nature of the Industrialisation;

The new regime of manufacturing represents a mutation in one paradoxical sense, important to grasp. Though anchored in the most jealous insularity, its viability nevertheless demands that the territories provide access to markets on a reciprocal basis. At the same time, its expansion, we have argued, its survival even, hangs equally on the ability of exports to move the economy and to win an adequate capacity to import. This insistence on exporting is what types the sector as a variant of staple, the derivative of which is that the home market, bereft of its own supply, necessarily goes captive to another's provisions. Such has been universally the essence of post-war development and is now more and more acknowledged in the newly emerged states. Industrialisation markets the output of the industrialised centres.

Trinidad's petroleum, we have noted, has until recently stood as a thing apart. Refining has accordingly been treated by the fisc as if it were an enclave activity offering processing service for a fee. Sugar has not deserted the cane plantation. Agro-industry, it enjoys neither agriculture's capability for self-support nor manufacturing's flair for making rewarding liaison.

The thrust accordingly has been coming from two main categories of activity - first the minor resource industries oriented principally to the building trades; and secondly, the assembly industries in wide variety including clothing and footwear, metal products, vehicles and household appliances and increasingly, such food items as chicken, pork, milk products, juices, jellies etc. In 1972 these two components divided the product in a ratio of 30:70. Amongst the latter, the lead was provided by the vehicles sub-sector which between 1968 and 1974 almost doubled its physical output in units (see table below). Helped by vigorous advertising, protection and CARIFTA, durables came to occupy the dynamic centre of consumer spending.

Assembly Manufacture of Selected Items 1968-74

<u>Product ('000)</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>
Motor vehicles	3.2	5.6	6.3	7.0	11.0	9.0	6.0
Radio and T.V. Sets	13.9	19.6	19.4	17.6	29.8	33.5	25.4
Gas Cookers	11.5	14.7	11.6	21.9	23.9	15.3	11.1
Refrigerators	5.7	9.7	8.5	15.6	20.4	20.7	23.6

Sources: Central Bank; and C.S.O. Statistical Digest.

Pioneer Industrialists

Since the industrialization was wedded to an increasing consumer expenditure on assembled imports, it is not surprising that direct foreign investment (D.F.I.) has been central to the process. McIntyre and Watson¹⁶, who have reported extensively on the relationship, noticed that for the international manufacturing corporations a platform already had been laid by the almost complete foreign ownership of such life-line industries as petroleum and sugar. Fresh hope would build on a time-honoured connection.

At the start of the period (1951), the level of D.F.I. stood at \$28m. or 9% of that year's G.D.P. at current prices. (Table 3b). We have however related D.F.I. to the previous year's G.D.P. in view of the important role played in investment by the factor income which it generates. On that basis, the period began with an 11% share by D.F.I. in G.D.P. while the average level for the entire 24 year period was 9%. As expected, this aggregate picture is dominated by fluctuations in the level of petroleum investment - necessarily a lumpy item. The rhythm shows the peak in 1957 (18%) during the first period and in 1971 (16%) during the second. The quantitative significance of D.F.I. is evident from Table 8a. In the 11 years 1956-66 it amounted to clearly less than 40% of Net Domestic Capital Formation only once and five times exceeded 60% the peak of 81.2% being achieved in 1957. As a proportion of business investment it amounted to less than 50% only in 1966, crossed 75% in five instances and actually reached 99% in 1963. These data reflect the success of incentive legislation in attracting 68 foreign enterprises out of a grand total of 283 engaged in manufacturing by 1966.

To all intents and purposes the 25% share of foreign enterprises in the number of all enterprises seriously underestimates the true impact of the foreign presence. McIntyre and Watson found "a tendency for foreign investment to be concentrated in particular industries and to dominate those activities"¹⁷. In some cases, indeed, a single establishment covered the entire industry while in others, the firms were no more than a few.

Moreover, the flow of capital seems to have been associated with the larger firms. Perhaps this provides the evidence of the celebrated package deals under which technology, management, entrepreneurship also constituted key elements in the transfer. Out of the 17 establishments employing more than 250 persons in 1966, 10 were foreign. On the other hand, out of those employing less than 49 persons, only 33 out of 192 had transnational status.

The chief sources of private capital were those countries which were active in trade with Trinidad and Tobago and which also put out factors of production on loan. In the one year for which McIntyre and Watson provided data, the three top investor countries were the United States (\$145m.), the United Kingdom (\$24.7m.) and Canada (\$2.4m). United States firms accounted for only 18% of all manufacturing concerns as compared to 35% for British firms but the former were far more substantially involved in the highly capitalised petroleum and petrochemical industry with one corporation, Texaco, accounting at the time for over half of the investments. The British firms operated chiefly in sugar, distribution and finance, in addition to being modestly engaged in mining (including asphalt). The Canadian enterprises confined themselves almost exclusively to banking and finance.

The predominance of the United States corporations in the transfer of capital squares with the tendency between the years 1962-73 for that country to replace the United Kingdom as top trading partner. While exports to the latter country fell from 26% to 5%, they rose on United States account from 27% to 50%. Imports equally switched their focus with the United States share improving from 13% to 16% and the United Kingdom component declining from 22% to 15%. (Table 6f)

The Agents Involved: the Public Sector

Whether national or foreign, manufacturers were meant to look to the State for support, for help and sometimes for shelter and invariably they have. The partnership has required Government to provide the infra-structure, private business the directly productive activities.

Ultimately in this scheme, public investment was to be financed by increasing current surpluses. It was anticipated that taxable capacity would broaden as much by way of revitalized businesses as by way of new ones. The latter would free the former for higher profitability by taking off their excess labour. In the short-run, however, development resources would be sought through more effective taxing of existing capacity. Current surpluses would be heavily complemented by loans raised at home if possible, but primarily, along with grants, in external markets and from international institutions.

The remodelling of the tax system began in earnest in the late 1950's and continued into the 1960's¹⁸. It embraced reform of both income taxation and import tariffs and it also introduced purchase taxes. The improvement of collection procedures had such a huge public impact that the calypsonian immortalised the system of "pay-as-you-earn". In the bargain, debt policy was adapted to the needs of more active participation by the State. Monetary instruments to facilitate wider debt management were created and enabling arrangements made for a larger scale of external borrowing.

Over the two decades or so of industrial promotion, an increasing share of the domestic product was raised in the form of current government revenue. From an average of 16.4% of G.D.P. in the first period 1951-61, the proportion rose to 18.4% in the second period 1971-72. (Table 8i). This performance did not, however, represent a rate of growth fast enough to satisfy the demands of a much more pronounced participation by the State in the economic life of the country. Expenditure tended to run ahead. Current expenditure grew at 11.1% over the period as against 10.2% for revenue. The corollary of this gap was that surplus over the whole period declined as a share of revenue, the average for the first period dropping indeed by more than half, from 16.7% to 7.4% in the second.

Meanwhile expenditure below the line - on development and related welfare- also kept growing as more active government accepted increasing responsibilities in these among other fields. As public capital works expanded, their financing could only be by debt, the recourse to which was reflected in a dramatic turn-around in the relationship of current surplus to debt in covering the deficit on overall account. The average ratio settled at 4:5 but this masks a transformation between the two periods from 5:2 to 1:2 in terms of surplus to debt.

Gross Debt rose from 13.8% of G.D.P. in 1953, to 17.5% in 1963, to 25.3% in 1973, doubling over the longer span. (Table 8d). In view of the open nature of the industrialization pattern and the active involvement of external agencies, factors and materials in private sector assembly and production, the surprising feature of this shift was that it did not entail any major claim on external resources in the form of heavy borrowing abroad. Net external debt as a share of net total debt declined steadily from 72% in 1953 to 56% in 1963 and then to 42% in 1973 (Table 8d). Moreover, it also tended to fall as a share of total product. In 1953, the proportion was 10%. After that, it necessarily dropped steeply as borrowing stood still; but though it recovered by the end of the period it still had not regained its original level. The burden - estimated for the period 1967-73 - represented an average of 13 weeks of the relevant measure of export earnings (or a mere 6 1/2 weeks if exports were not adjusted to exclude those under the petroleum processing agreements). (Table 8c)

This is not to say that after 1962 (the year of political independence) the level of activity in the sphere of foreign borrowing was inordinately low¹⁹. Loans and transfers were negotiated both on bilateral and multilateral (international agency) account. Not only did

Government borrow directly for itself but it also guaranteed loans for public corporations, public utility companies, for profit-making state enterprises, and corporate ventures involving joint participation by private and public sector. The overwhelming number of transactions entailed project financing and a certain amount and kind of technical servicing. The emphasis fell strongly on infra-structure areas: Highways, Telephones, Electricity, Sanitation, Public Transport, Agriculture, Education, Family Planning and pre-investment as well as feasibility studies. Activity confirmed the division of labour between public and private sector settled in the overall strategy of industrialisation.

It is therefore not surprising that the bilateral transactions on public account paralleled those on private account. Estimates for the period 1962-1967²⁰ show that loans were distributed by country as follows:

<u>United Kingdom</u>	<u>United States</u>	<u>Canada</u>	<u>Other</u>
\$160.2m.	\$102.9m.	\$18.7m.	\$36.2m.

The consideration here is the mode of incorporation of the Trinidad and Tobago economy in the international order with special reference to:

1. its relationship with the economies of the North Atlantic;
2. the distribution of roles and rewards between foreign business, foreign governments, the public sector in Trinidad and Tobago as well as the private sector.

Included within the last category are, on the production side, organised business and organised labour, and on the consumption side, consumers who purchase imports and import replacements as well as those who purchase residentiary outputs and import-displacements.

Our hypothesis here is that the allocation of responsibilities alluded to above hold the vital clues to the peculiar problems which have arisen in the overall financial operations and the consolidated financial accounts of the growing public sector. These peculiarities in turn are thought to reflect the comprehensive, consistent, and continuing economic and financial under-mobilisation which has characterised the industrialisation programme in Trinidad and Tobago, and which, in fact, induced the financial crisis in public sector operations at the end of the second period under scrutiny here.

The anatomy of this under-mobilisation is important to our study not only because it seems to have been related to a crisis of political economy²¹ wider than in the financial accounting of the State but also because it may be the chief factor which has distinguished post-war industrialisation in the new states in general and which, therefore, points to the options for policy revision as much in the new international order as in the domestic economies concerned.

The most critical period of the entire post-war attempt at industrialisation actually coincided with that of the Third Five Year Plan. Attention has been directed above to the immediate post-war boom which lasted up to 1961, after which followed the slowing up which was succeeded in turn by the revival of 1966-68, the whole rhythm being in sympathy with the movement of staple earnings accruing from the output of crude petroleum. Now, for the five years, 1969-73 and for essentially the same reason, the Plan target of a 4.3% rate of growth of real G.D.P. was underfulfilled by 2%.

The leading sector suffered a decline of 30% between 1968 and 1972 owing to the depletion of known oil reserves (Table 3c). After 1969, the current account deficit in the balance of payments increasingly worsened leading to a drop in foreign reserves (Table 6a), and a resort by the authorities, for the first time, to short-term external borrowing. The fiscal position also deteriorated increasingly as is evidenced by the occurrence in 1973 of the only actual deficit on the overall account for the three years from 1970 to 1972.

To finance these widening gaps in financial resources, the Government necessarily had no option but to borrow - primarily at home but also abroad (Table 8i). Borrowing in turn contributed to a build up in 1972-3 of inflation on a level not experienced since the World War boom. Indeed, the economy seemed hedged in on every front with the manufacturing sector on the frontier of both development and hope, now clearly tied to high-cost production, high import-dependency and foreign investment of questionable validity and value. Until the increased petroleum prices and revenues made its dramatic entry in October 1973, it seemed as if more than two decades of economic planning and active government had culminated in a complete futility.

This economic, fiscal and planning crisis was accompanied in the wider social realm by cultural conflict and political unrest on a scale not witnessed since the upheaval of the late 1930's which had heralded the change in economic and political regime. The effect of the convergence was a declared shift in priorities away from the pre-occupations of mere political independence to those of an effective economic independence.²² The programme which followed articulated plans for national reconstruction of the economy, stressed the notion of a People's Sector and initiated a role for the State not simply as the creator of infrastructure for development and welfare but as the controller of the commanding heights of production and an active participant in the sphere of profit-making enterprise.²³

And yet, in terms of its proven capability, in terms of its taxable capacity and its ability to service commitments in foreign exchange, the economy lay in crisis owing only to the pattern of resource direction and resource mobilisation. On financial account the ratio of net total debt to G.D.P. had been rising steadily - moving from 18% in 1967 to 22% in 1973. But this burden was still extremely low. The domestic component rose at the same time from 7.7% of G.D.P. to 9.5%. But this level too was incomparably lower than that in a selection of countries including all of the country's main economic partners. (See Table 8f). Moreover, the external component of net debt - as a capital item - amounted to no more than 30.7% of adjusted exports earnings so that in terms of actual debt servicing - on a current basis - the burden stood at only 3.2% of the same adjusted export earnings. (Table 8e). Here too, Trinidad and Tobago ranked very favourably in the world comparison, in the Western Hemisphere, and within CARICOM. (Table 8g).

At the back of the economic, financial and fiscal crisis, therefore, lay not a problem of national poverty or scarcity of critical resources, but a problem of distribution and allocation. The resources for development and welfare, it seemed, were accruing in the wrong places, a fact which, in the period under review, surfaced in the chronic inadequacy of revenue in relation to expenditure and correspondingly in the rapidly dwindling surplus.²⁴ Against this background, debt servicing, which during the period ruled at a level of 10-12¹/₂%, provided definite cause for alarm.

In other words, the fiscal and related crises were no more than a symptom of certain institutional rigidities and policy constraints inherent in the chosen path of industrial development. The choice of path may be seen to lie between import substitution and export promotion, or between heavy industry and light, or between resource-led and taste-led expansion, etc. But whatever the view taken for convenience, there follows a certain natural determination of income shares, a natural pattern of factor and material employment (or neglect), a warranted pattern of spending and saving, and of course, a required specialization and division of labour between agencies, sectors, etc. It is obvious that these embedding conditions govern the feasibility of any given strategy. Whatever choice prevails necessarily carries its own imperatives.

In this case the ends of the chosen strategy were to raise national income, government revenue, national savings, etc., through the enhanced employment of domestic entrepreneurship, management, professional services and labour.

In other words, the institutional framework of collaboration was required to achieve a compatibility between the ends and two different sets of means: enhanced employment of both internal and external factors. The technology of producing import-replacing goods, the prevailing corporate form of highly integrated multinational organisation and the terms set for their participation by the Government, the Unions, and the general climate, would have to admit the level and the form of domestic participation necessary to generate the desired shares for income, revenue and saving. The record of the two periods of industrialization suggests that this compatibility condition was neither clearly sighted at the outset nor in the end achieved.

Employment of Domestic Factors

Employment figures for 1946 vary quite remarkably. Some dislocation in the labour market was clearly caused by the closing off of employment on American military bases and no doubt, by a certain amount of unmonitored migration, internal and external. The picture becomes clearer only in the middle 1950's after the industrial programme had gotten underway. Nevertheless, the dominant theme throughout the thirty years has been a persistent growth in the numbers unemployed and for the most part a steady rise in the proportion of these in the labour force (Table 2b).

The numbers unemployed moved as follows:

	<u>1946</u>	<u>1956</u>	<u>1966</u>	<u>1976</u>
'000	14.6	17.0	49.0	60.1
%	6.8	6.4	13.9	15.0

The striking fact is that the economy fell far short of achieving what had perhaps been the primary objective of industrialisation: a fuller if not full employment of the labour force. Moreover, unemployment seems to have been influenced more by the demographic or supply factor rather than by the economic or demand factor. The labour force rather than the level of activity has been the visible determinant.

The thirty years have witnessed a market change in the pattern of population growth which has not (yet) however affected that of the labour force. Between 1946 and 1976, population increased from 563,200 to 1,098,600, a rise of 95%. A clear watershed is noticeable

in 1962 when the rate of growth attained the high of 3.4%. Before that, during the 1950's, it ruled at an annual average of 3%. Thereafter, it declined, dropping steeply after 1966. Between 1967 and 1976, growth barely achieved an annual average of 1%. (Table 2a)

The impact of the fall in population growth will not be felt until the early 1980's so that the high growth rate of the labour force persisted throughout the period under study. Between 1956 and 1964, the labour force grew by 3% and the unemployment rate more than doubled. Some 79,000 job seekers entered the market but only three out of five were able to find jobs and it became clear that the target of a 70% absorption of the increment by the expansion of manufacturing activity stood little chance of being fulfilled. Pioneer manufacturing was simply not dynamic enough in generating employment. One estimate for the period 1950-1963 credits the sub-sector with 7,000 jobs a rate of absorption of only 9%. For the period 1953 to 1957, for which some fragments of data are also available, the corresponding rate was somewhat higher at 12%.

During the period 1964 to 1974, the rate of participation in the labour force declined by 3.3% per annum as more persons of working age refrained from entering the market. Moreover, some 90,000 people migrated, 30,000 of whom were potential employment-seekers. In spite of this, the labour force expanded at a rate of 1.6%, half as high again as population. And yet unemployment grew by 4%, 2 1/2 times as high as the labour force.

The absorption rate, however, improved its performance. Of the 48,000 joining the labour force, 27% remained unrecruited. Here manufacturing seems to have provided at most 15,000 jobs in ten years - to judge by data on the combined total for that sector and mining (Table 2c). This figure compares with an estimate of 8,000 jobs added by the sector for the seven years 1970-76, according to another source. Our period closes, as we have seen, with the unemployment rate at 15%, with over 60,000 vainly seeking jobs. In the face of these results, the projection of full employment in 1983 by the Third Five Year Plan seems at variance with any actual prospect - unless the changes in policy which were initiated in 1970 combine with the changes in fortune which intervened in 1973 to transform the pattern of job creation.

In formulating new policies towards employment, there is a risk in regarding the high rate of unemployment as a legacy of early industrialisation, as an intractable problem which has risen out of the bias of prevailing technology towards capital-intensive techniques and towards an inordinate dependency on imported inputs. All of that it may be; but the Trinidad and Tobago experience suggests that it may also be a great deal more; that, indeed, unemployment is a product of processes which render it increasingly difficult to introduce policies that might lead to its solution. Unemployment, it seems, arises out of the same rigidities which we have pointed to in connection with the crisis in public sector financial operations at the beginning of the 1970's.

The opening of the economy to foreign investment in the early 1950's seems to have placed an intolerable burden of adjustment on the fledgling residentiary sector which the previous period of delinking had created. Precious few of the artisan-type "firms" of the early phase seem to have graduated to the later phase in fields such as the motor-repairing industry, furniture-making, garment-making, manufacture of household appliances, metal-working, etc., in all of which there had occurred a proliferation of small business. As final imports and

import-replacing assembly prevailed, what therefore was displaced if not lost was not merely employment in a so-called traditional sector but a vast reservoir of entrepreneurial and managerial potential.

This displacement was to become an issue in the political unrest of the early 1970's whereupon a survey found that 20% of the sample had achieved top positions in business by own-account enterprise as against 30% by inheritance and 50% through being hired. (Table 41)

Official data also suggest that own-account workers have been declining in importance:

<u>Own-account Workers as Percentage of Total Workers</u>		
<u>1946</u>	<u>1961</u>	<u>1971/72</u>
28.5%	21.2%	15%

The inter-industrial matrix which we have already described reflects the impact of this displacement of own-account small-scale activity. Quite apart from technology, economic sociology and economic organisation also are instrumental in the forging of linkages. Backward linking to resources often requires middle-level organisation with access to limited and local sources of supply. The disruption of such organisation has certainly led to an excessive use of imported inputs in the food processing industry for example.

The displacement of the own-account sector is therefore closely related to the complete decline in agriculture which is described in the figures on domestic product. (Table 3a) The relationship is many-sided. In some cases there has been a diminution in output when a new firm starting at the top has driven out a small operator without being able to "find" his local supplier. In other cases, agricultural production has been rendered unfeasible by the impact of higher industrial wages. But perhaps the most interesting case of all lies in the impact which the progressive dislocation of the labour market and of the own-account sector has had on the public sector. This effect is best understood against the wider parameters of political sociology - confirming the need for case studies which are historically located.

Aided by the structure of political affiliation, the displaced workers have mostly gravitated towards the public sector. It will be recalled that the residentiary sector was born only after the slave plantation broke down (so that the traditional sector is here newer in fact than the modern sector as it is the locus of much more dynamic entrepreneurship). Thus the own-account classes were in an important sense historically distinct from the merchant groups who traditionally have serviced the staple sector with imports. The displaced generations from the residentiary or own account sector did not cease entrepreneurial and managerial activity altogether but transferred it to the more receptive public sector and assumed the role of a technical professional and administrative cadre.

At the same time, the high and rising level of unemployment in the economy as a whole has obliged the public sector to assume the role of employer of last resort. Thus new management has had to cope with a labour force which could not but expand in the service of more active government, responsible for laying down and maintaining a growing infra-structure, and which also could not help being inflated in order to keep the labour force in gainful (if not productive) employment.

This combination of circumstances has undoubtedly strained the capacity of the public sector with negative effects on efficiency all round. The management of public utilities, public corporations, and state-run ventures has been thinly spread with the learning process inhibited by frequent changes of tactics, themselves induced by a lengthening chain of management errors.

In other words, the impact of the industrial strategy on the economy carries multipliers with it. The effect of large-scale unemployment and displaced own-account enterprise on the public sector illustrates the power and might of cumulation. The inability of the public sector to cope, in turn, has delayed needed adjustments in education, in agriculture, in utilities, in environmental management and indeed, in the framework for redirecting the industrial effort.

At the same time, the rates of pay in the public sector - given social, political and electoral imperatives - cannot but be competitive with those in the staple and quasi-staple sectors. Emolument costs are high and impose rigidities on expenditure even as the industrial programme itself, as we shall see, imposes rigidities on the accrual of revenue. The upshot of these relationships is that policy becomes locked into extremely narrow options having little to do with the productive capabilities of the economy. Undermobilisation becomes a chronic condition as is witnessed by the fiscal crisis of the early 1970's as by the political crisis - the latter quite possibly attributable to the particularly heavy impact of unemployment on the young labour force, comparatively well educated.²⁵

Often the adjustment to such developments is negative. Migration, for instance, shot up dramatically, at the turn of the 70's, resulting in a loss of professional skills which further aggravated the undermobilisation (Tables 2a and 2d). On the public sector side, the mixture of responses included, as noted above, important shifts in policy emphasis. But these may well have been negated by a huge expansion in unproductive State employment and a heavy overloading of the agenda for economic reconstruction.

In short, the industrialisation strategy may well have placed the economy in a syndrome. To break out of the cumulation of artificial problems, the economy must be turned whole around so that it progressively mobilises more of its productive capabilities and resources. In a sense, here re-emerging is the option which, out of theoretical, ideological and political dependence, was perhaps wisely evaded in the early 1950's. Introduced (replacement) manufacturing appeared attractive chiefly because the crucial resources industries for residentiary manufacturing - sugar and petroleum - could not be readily and actively incorporated into the matrix of domestic production.

3. Imperatives of Industrialisation:

Income Distribution:

The central feature of income distribution in Trinidad and Tobago has been the large and persistent gap - amounting to 10% of G.D.P. from 1951-74 - between Gross Domestic Product and National Income. This gap is of course a necessary consequence of passive incorporation into the international order (and we have seen that in the case of Pure Plantation Economy Net Factor Income Going Abroad consumes the whole of Domestic Product). The original purpose of

establishing the Caribbean economy was to organise such a transfer of surplus. Initial transfers of real resources on joint-stock or corporate account yield a continuing stream of income thereafter enhanced by the power of compound interest as staple activity cumulates its command of resources, and pursues accumulation through the ploughing back of profits.

The post-war record established a line of kinship between model and reality, between algebra and arithmetic, between past and present. We have recorded the pattern of financial inflows with particular reference to private foreign investment (DFI). In the 24 years since 1951, the aggregate amounted to \$ 2095m. (Table 3b). The corresponding outflow of investment income stood at 34.5% higher, having totalled \$ 2819m. In the 24 years, net outflow exceeded net inflow no fewer than 18 times. The annual average inflow reached \$ 87 m., the corresponding outflow \$ 118m.

This appropriation from the domestic economy needs to be computed as a rate of return on investment so as to estimate the element of rent accruing to the external factors of production, the level of excess borrowing²⁶ and the degree of resource immobilisation through loss to the national economy. In regard to rent, it is enough to reiterate here that the dynamic sector in the creation of such surplus was the petroleum sector, dominated by U.S. corporations.

In regard to excess borrowing, the data do establish that, over the period of our study, the real net transfer was outwards, to rather than from the rest of the world. In this sense, Trinidad and Tobago proved not to be short of capital though the "excess" borrowing, may well have been "necessary" borrowing, in Knapp's meaning of the term. Petroleum technology and modes of assembly in the import replacement sector could arguably only have been acquired in a package with capital. Thus it can be seen that the prevalence of a form of closed business organisation which practices factor differentiation and discretionary factor pricing is the cause of the twin phenomena of surplus in the form of rent and of excess borrowing in countries passively incorporated into the international economy. Trinidad and Tobago richly illustrates.

We have noted the terms which development strategy set for participation by external factors of production. An array of incentives contributed to this successful shift to profits.

The question has therefore been raised as to whether the supply of capital would have been inelastic to changes in the level of incentives²⁷. Whatever the answer, the scale of the transfer attests to the high productive capability of the economy and poses a second question: What would the impact have been had the rent accruing as factor income abroad been directed towards national income in a way that also invested it with the power of cumulation?

The total transfer (Net Investment Income) grew for the most part faster than domestic product both in the boom and slump phases of the staple cycle. (Table 8b). Total net income from direct investment^{27b} claimed 18.8% of the export earnings for the 24 years. In no year was its share less than 12% and for 14 years it came to over 20%. If public policy had specified that inflows and outflows should simply have balanced, the gain to Trinidad and Tobago would have amounted to \$ 4lm. per year, the equivalent of the biggest surplus ever realised in any one year on the current account of the Government Budget in the times before the OPEC bonanza.

The international sharing in the country's domestic product is determined partly by the productivity of external factors, and partly by the proportion of the output of the staple and quasi-staple sectors accruing to the latter. This includes income accruing through the medium of excess prices for imported material inputs and intermediate services. The medium of prices is perhaps more widely employed in the quasi-staple sector where the sales prices set by the merchant-industrialists who assemble final products are as instrumental as their purchase prices.

These prices are therefore important to the relationship between national income and gross domestic product in that respect. They necessarily throw into relief the range of measures which admit inflated product prices. Instances in point are Negative Lists and even less absolute quantitative restrictions. By 1978 there were some 500 items on the Negative List, 20% more than in 1972²⁸.

To put it differently, pricing acquires added potency as a mechanism of distributing real income where availabilities are restricted. To put it that way is of course to state a common place. And yet it is not so commonly appreciated that one of the most potent determinants of income distribution in the countries practising quasi-staple industrialisation has been the devastating impact cumulatively visited on residentiary supply by highly protected and often subsidised import replacements.

We have seen that in Trinidad and Tobago this displacement shows up in unemployment, in the re-allocation (or misallocation) of management and entrepreneurship, and given the particular context of political sociology, in the additional burdens placed on the public sector. So far as income shares are concerned the effect is even more difficult to trace, particularly since the restriction of availabilities results in the formation of taste. Nevertheless the mechanisms exist, even if their effects on income are not susceptible to measurement.

On a more conventional plane, it is, however, possible to point to some direct effects on government revenue of the incentives accorded to pioneer and related activities. The number of firms granted fiscal concessions is steadily expanding (see Table below). The growth was reflected in a steady rise of imports exempt from duty (Table 8j). While total (adjusted) imports rose at a rate of 13.7% between 1967 and 1976, imports exempt from duty under incentive laws jumped by 34.2% per year.

Fiscal Concessions to Firms

<u>Year</u>	<u>Import Duty</u>	<u>Income Tax</u>	<u>Neg. Listing</u>	<u>All Concessions</u>
1976	56	1	-	57
1977	44	2	2	48
1978	-	-	-	63
Total	100	3	2	168

The revenue foregone from these concessions increased from \$ 15.8 m. to \$ 182.8 m. over the period, at a growth rate of 28.1%. Here is one of the rigidities which contributed to the fiscal crisis of 1970-72. In 1971, the current account plummeted into a deficit of \$ 2.5 m. but duty foregone amounted that year to \$ 62.2 m. As dutiable imports fall in proportion to total imports, the effective rate of duty on them stands more than twice as high as on total imports engendering an obvious redistribution.

Being jointly influenced by the framework of concessions to industry then, are corporate income, income to merchant-industrialists, and (real) income to (captive) consumers. Obviously, the compensating mechanism of adjustment for the last category, the multitude of consumers, is wage bargaining. But only the employed are in a position to bargain - not least when high and rising unemployment is a constant. Moreover, only a section of the employed enjoy the organisation to bargain with effect. In Trinidad and Tobago, there are some 20 Unions providing organisation but for only 120,000 workers or about 1/3 of the labour force.²⁹

The groups best placed to organise are those employed in the staple and quasi-staple sectors, on the one hand, and those employed in the Government sector, on the other. Both political and economic factors contribute to the strength of their position. High capital intensity in the staple and quasi-staple sectors tends to lighten the burden of incremental wage costs though, in the latter case, the cost of spare capacity may negate the benefits unless pricing adjustments can be urged in the support. In some ways then, organised labour in these sectors has an interest in common with the corporations and the industrialists even as much as they naturally stand in an adversary relation.

In the public sector, organised labour enjoys the advantage that where petroleum is the staple, an even larger share of national income than is usual accrues first, on revenue account. Thus, the work force has an interest distinct from its counterpart in the staple sectors. However, they share an interest in maximising the take for the national income out of the larger domestic product.

We have now identified three clear categories of income: corporate income, income of merchant-industrialists and income of organised labour, the last accruing partly in the private sector and partly in the public. Included with organised labour is the professional

services class, hardly distinct in kind from the managerial and technical cadres who occupy the higher rungs of the public service. What these private professions share with their counterparts in the public sector is that their bargaining position is strong.

One category of income therefore remains - an amorphous category of mixed incomes which accrue to the poorly organised, unorganised, or disorganised, residentiary sector. To the extent that this sector consumes imports and import replacements, its position essentially depends on the terms of trade between residentiary output and imports. The sector, in that regard, is not necessarily a price taker but, in any event, its real income depends more on the income-terms than on the commodity-terms of trade. It is not so much the exchange value of commodities which matters as the opportunities to deliver output to the market. In the nature of the strategy of industrialisation through introduced manufacturing, the accent is on immobility and inaction on the part of domestic factors, and, as we have sketched in the previous section, unemployment prevails; opportunities to produce are correspondingly restricted.

We have now arrived at a rather curious economic sociology. By their nature, the corporations are well equipped, if necessary, to shift terrain and to switch their involvements to other locuses of production. Moreso in small countries, these large companies enjoy easy options. When the staple is booming there is little incentive to disrupt its functioning; when the staple is in slump, by contrast, external services are all the more highly valued³⁰ ... provided that the economy is not diverted into another direction. The upshot of this is that the corporate sector tends to acquire the status of an enclave - above all, if its operations are, as in Trinidad and Tobago, essentially offshore and progressively substitutes capital for labour. This sector aims to secure its share of the product but in most ways it stands outside of the system. That is the picture at the top, as it were.

The picture at the bottom is very similar. The residentiary sector is not the dynamic centre of the economy. Its share of the product is tantamount to a residual, topped up to the extent that political pressures on the public sector push back the frontier of unemployment and increase the flow of welfare services. This sector too, in terms of its economic (not political) participation, lies apart, aloof and away from the system.

The main contention over the division of the product takes place therefore in the middle ranks of the economic order. Organised labour is pitted against the merchant-industrialists but within a framework of a strict interdependence in that the income earned (in foreign exchange) from the staple sector must be spent on demand for the outputs of the quasi-staple sector. The weapons in the duel, as we have seen, are wages and prices. Needless to say, the contest is made fiercer by any extreme of surrounding conditions, be it inflation or stagnation, sudden indigence or sudden affluence. The build up of inflation in Trinidad and Tobago followed by the sudden onset of elevated petroleum earnings, indeed, triggered off such a sharpening of "struggle".

In Table 9a, are shown fragmentary data on wage settlements at the level of individual sectors and sub-sectors. Notable is the escalation of increments in response to rising prices and to the runaway boom in staple earnings. The typical contractual settlement in 1967 yielded 12%; by 1970, it could have fallen anywhere between 30% and 80%. Three settlements were reached at over 50% increase, eight at 40% or over and one even attained the pinnacle of 100%. At the macro-economic level, wages and prices performed more sedately. The picture appeared as follows:

	<u>Minimum Wages and Prices</u>					
	<u>Percentage Change</u>					
	<u>1971-72</u>	<u>1972-73</u>	<u>1973-74</u>	<u>1974-75</u>	<u>1975-76</u>	<u>1976-77</u>
Wages	9.4	12.0	11.9	28.5	21.6	11.7
Prices	9.2	14.8	21.9	16.9	11.6	12.7

Wages and salaries in the public sector, we have noted, play a special part in the scheme. Table 9b shows that emoluments, ruling at over 70% of current expenditure, took a slight squeeze in the crisis years 1971-73 but have since sustained a remarkably high share of expenditure in view of the spectacular hike in the latter since 1974 (see Col. 8).

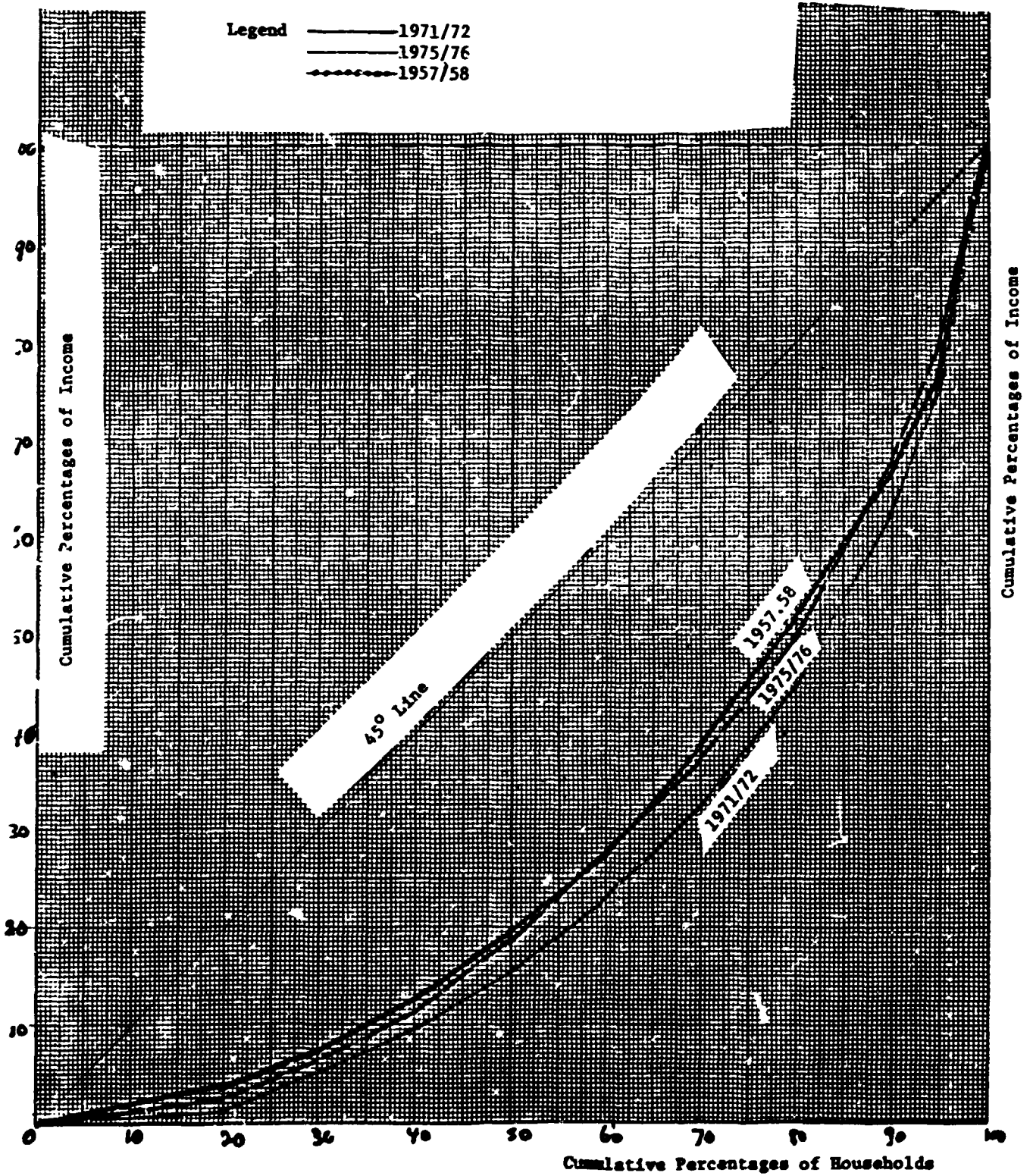
More interesting is the movement in relative positions. Payments to weekly paid workers were declining from 11.7% to 8.6% of total expenditure on wages and salaries (Col. 11). The corresponding figure for monthly paid workers by comparison, advanced from 70.7% to 73%. Part of the explanation lies in more effective bargaining (Table 9a) and part in the huge expansion in State employment. Between 1969 and 1976, over 9,000 new permanent posts were created in this area, a 12 1/2% increase for the period and a 75% share of the increment for the Services sector (Table 2c).

The Effect of Factor and Sector Shares on Household Income

Production, importing, assembling and the mobilisation and immobilisation of productive factors, and the related bargaining for rewards, revenue collection and expenditure by Government - these processes together determine the shares of product and income accruing to factors and sectors, to the national economy and the rest of the world. The national distribution is exhibited in the pattern of household income. How has the post-war introduction of quasi-staple manufacturing into the petroleum-led economy - under the guidance of more active government - expressed itself in this respect?

The first monitoring of the results took place in 1957/58 roughly seven years after the enactment of the Pioneer Industries Ordinance (Table 4d). It appeared from the Household Budget Survey that the 20% of the households with the lowest incomes received 3.5% of the total household income while the top 5% enjoyed a share of 22.5%. The highest income households were rewarded on average with 25 times the income of the lowest households. The Gini co-efficient of concentration stood at .40, placing Trinidad + Tobago

Figure 1. Lorenz Diagram : T.T. 1957/58; 1971/72 and 1975/76



within reach of the self-sustaining, industrial countries, actively involved in the international economy (Table 4b). The inequality was immense, but not outrageous by prevailing standards - least of all against the colonial background.

For Great Britain, at the top, the co-efficient was .33; for West Germany, seventh, .39. Was this perhaps the equalising tendency of Depression and War in the context of a sustained delinking from staple connections? Doubtless the re-linking of the economy with imported supply already had begun the process of factor displacement. The unemployment rate had risen from 6.8% in 1946 to 8.1% in 1957 and the warning signals had gone into action. Yet Trinidad and Tobago's position lay, on the worst interpretation, in the middle zone between the countries of comparison. The Jamaica co-efficient, for example, was estimated at .53, a concentration one-third as high again.

It was just at this stage, in 1958, that the Industrial Development Corporation (IDC) made its entry and stepped up the promotion of pioneer activity only to find correlates which, by 1972, had elevated the unemployment rate to 13.2%. Now, at the end of the second decade, the negative impact of industrialisation on income distribution amongst the households emerged as clearly as in respect to employment.

The 20% of households at the bottom now received only 2.2% of the income, down 1.5% or a third, on the basis of the new Household Budget Survey. By contrast, the richest 5% at the top had advanced their share to 24.7% of the household total, representing a 9% improvement. Rich households now received on average 38 (as against 25) times the income of poor ones and the Gini co-efficient of concentration jumped to .51, almost the Jamaican level of 1958, a worsening by one quarter of the 1957/58 mal-distribution.

If these data are trustworthy, clearly a massive redistribution was wrought by post-war processes. In the 14 years between Budget Surveys, every group except the three richest sustained income losses in their share of the household total (Table 4d). It seems that the diminution in the number of own-account workers and the related disappearance of small residentiary business (Table 2c) did in fact carry a great significance, possibly economic as well as political.

The so-called Black Power rebellion followed by small-scale guerrilla-type activism amongst the youth erupted in the period 1969-73. In October 1973, however, the petroleum staple experienced a return to the Golden Age.

It has been repeatedly recalled that the period 1969-1972/3 marked a tightening of options in public policy due largely to a faltering of returns from the major staple. Attention has been drawn to the crisis in financing the current account deficit in 1971 (Table 8i). Even if the rhythm had slowed by comparison with 1966-68, the economy remained essentially well-off, export earnings and factor income going abroad did not show any exceptional deviation. The problem lay in the public accounts. Policy had become locked into concessional taxation in the face of galloping expenditure.

In terms of the debt burden, a much higher level of borrowing was eminently feasible but the absence of revenue for current servicing would constitute a clear negation. A crucial conjuncture had been reached; taxation had now to aim more directly at the reduction of expenditure on imports and at the expansion of the new manufacturing sector. Revenue needed to increase and the foreign reserves to be enhanced by a shift of resources from the sectors involved in spending foreign exchange. The increasing concentration of household income had to become the most specific target.

Such was the situation defused by the 1973 oil bonanza. The public accounts for the subsequent years reveal a clear shift towards transfer payments as part of a vastly expanded welfare programme. These payments include increased pensions and social assistance while the welfare programme embraces subsidies on gasoline, basic foodstuffs and utilities, cash allowances to school children, free school buses, free school meals, etc. Building materials and housing loans also are provided to the public at less than market prices. Of most relevance here, income taxes and certain indirect taxes have been lowered in successive stages³⁰.

Doubtless these have been adjustments to the developing situation reflected in the income distribution soundings for the 1970s. The 1971/72 Survey had indeed suggested that some 35.1% of households fell below the so-called poverty line³¹. (Table 4e). Indications also were that over 40% of the households in plantation (rural?) areas were poor as against 25% for the port (urban?) areas, evidence perhaps that the steep drop in residentiary agriculture had been compensated for on a smaller scale than the corresponding movement in manufacturing (Table 4i).

Estimates of the distribution of poverty by race also became available from survey data (Table 4j). The results converge with those derived from the 1970 profile, already referred to, of the business elite. (Table 4k). It was inevitable that the industrial displacement would have had a differential incidence in both geographical and sociological terms since the population is marked by both a regional and a sectoral concentration of the races. By and large, Indians are engaged in staple and residentiary agriculture in and around the (agro-industrial) plantation areas. Africans make up the bulk of organised labour in the port and its immediate hinterland, that is to say in the public sector, the mineral staple sector and the quasi-staple assembling sector.

Indians however, are progressively increasing their share in all three, especially in the first, as colonial patterns recede. Current economic sociology is more readily explained in terms of the legacy of political sociology.

Current policy also falls into place when we perceive the adjustments that are needed and the options which are involved. The Household Budget Survey results for 1975/76 seem already to have been influenced by the turn-around in fortunes since late 1973. The Gini co-efficient fell from .51 to .474. The bottom 20% of the households regained some of their share of the total and moved from 2.2% in 1971/72 to 2.7% (Table 4d). The share of the top

5% showed the same movement towards lesser concentration; it fell to 20.2% from 24.5%. In other words, at the extremities, the structure of distribution remained essentially unchanged. Indeed, some 34.8% of the households appeared to be falling below the poverty line (Table 4h). The bottom 20% were still worse off than in 1957/58 while the top 5% had maintained their position of precisely that period. Overall, the latter's average came to 30 times that of the poorest households.

Where some structural changes seemed to be in process was amongst the middle orders. Whereas between 1957/58 and 1971/72, all groups below the 9th decile sustained losses in their shares, following on the injection of the OPEC-level oil revenues, the movement was much less one-directional. The first, second and fifth deciles recorded different degrees of improvement while only the upper half of the 10th decile registered a significant loss. These data appear to lend support to the pattern of contention over the division of the product which we have noticed in earlier analysis. The dynamic of economic or "class" conflict is a phenomenon restricted largely to those intermediary sectors which separate the residentiary world from the staple-producing enclaves.

The Pattern of Expenditure

The viability of the strategy of "introduced-manufacturing" was from the start seen to depend on progressive increases in the marginal rate of national saving. It was quite pointedly implied that the process of wooing and fawning on foreign investment could perpetuate domination if nationals did not find the funds to repatriate the foreign investors. However, by the end of the first decade of industrial promotion, the Second Five Year Plan reported on a declining rate of personal saving to personal income.³²

Per capita consumption had in real terms been outdistancing per capita income by 4.6% to 3.5%. This pattern is confirmed by the Household Budget data for 1972 which show the average household to have been spending 19.1% more than it had been earning (Table 5a). Only the four richest groups, deciles 8, 9, and decile 10 (lower) and 10 (upper), enjoying incomes higher than \$ 900 per month, achieved any savings, their average amounting to 20%. At the bottom, the first and second deciles, with incomes below \$ 100 per month, actually spent on a scale five times their average income.

The disappointing performance of saving is attributable to two factors, it seems. First of all, there occurred a 19% increase in wage earners relative to other participants in the economy (Tables 4a and 4c). This displacement of own-account entrepreneurs by employees and unemployed arrested the natural process of capital formation which simultaneously creates both income and saving. The effect was probably to lower the level of national income and quite definitely to change the form and the locus of accrual. Wage earners are in general poorer than own-account operators; the cash in which they are paid is easy to spend; and when they are employed mainly by the State which earns most of the revenues from crude petroleum, spending appears to be especially seductive. Thus on balance all three factors conspired to promote consumption.

Secondly, as we have argued, the success of assembly manufacturing came to depend on the domestic market. Aimed at home spending, the output of consumer durables, for example, supported by advertising³³, grew steadily from 35.7% of manufacturing output in 1966 to 45.8% in 1972. Food and beverages declined from 33.5% to 27% even as both food and manufactures drew increasingly on imported supply, with durables, however, surging ahead at 10.2% as against food and related goods at only 1.9% (Table 3d).

The position therefore leaves little room for doubting. Between 1951 and 1961 real consumer expenditure was positively correlated with outlays on durables - 7% and 9.8% respectively (Table 5d). By 1972 over 12% of spending was devoted to this category of output and the prevalence of low margins of domestic value added³⁴ supports the widespread assertion that industrialisation has meant little more than the organised marketing of the manufactured outputs of metropolitan countries.

The Pure Plantation Economy imports in order to export; it has no other reason for being. The contemporary Caribbean Economy has now acquired the role of importing so that the metropolitan countries could export. The well-being of the citizen constitutes little more than a residual interest. The combination of the pattern of income distribution and the structure of personal expenditure leaves this imprint on the make up of the household budgets. In 1971/72, income groups below \$ 200 per month averaged 37.4% spending on food, the groups with \$ 900 and above, in comparison, averaged 20.3%. On durables, the corresponding figures were 6.2% and 16.8% respectively (Table 5f).

The structure of total expenditure on food is an important pointer to the effect of the programme on basic welfare. In 1971/72, the average household with under \$ 200 per month spent 35% of its food bill on cereals and starches while the \$ 600 (and above) household devoted 14% to that item (Tables 5h and 5e). On meat and dairy products, the former spent 10%, the latter 16%. What is more, the \$ 600 (and above) households showed rapid decreases in shares spent on starches as income went higher and correspondingly rapid increases in shares spent on proteins. Much less elasticity is evident as incomes fall for households with \$ 200 and below.

The picture for the lowest households, above all, points to the negative development of agriculture. It seems that the poor suffered from the problem of unavailability of the "nobler" commodities so that income increases were negated by movements of price. The corollary of high commodity-terms of trade for agriculture simultaneously with low income terms of trade has been that the poor were caught with such low real incomes that, in 1971/72, 40% of the households were failing to meet the requirements of an adequate level of food consumption (Table 5g). Some 31% were falling short of an adequate intake.

In spite of exceedingly low real income and structurally inadequate diet, the poor and disorganised households exhibit an income-elasticity of demand for protein foods remarkably high in comparison to that of the organised and rich households. What this implies is that the poor and disorganised often opt for high-priced foods in preference to the

larger calorie intake they could get from buying lower-priced starchy foods. If this is the case, then malnutrition can be seen to be the direct result of the dislocation of supply conditions in agriculture and the related skewing of prices of protein foods especially where colonial consumption habits are perpetuated by the comparative affluence of the staple sector and the better access to imports enjoyed by the rich and the organised.

Here then we gain an insight into the welfare priorities demanded of the hugely increased incomes from crude petroleum. The school-feeding programme has already been identified as one of the adjustments of the post 1973 era. The question, however, is whether such welfare spending can be sustained without a radical alteration in the conditions which first made them a necessity. Staple bonanzas have time and again visited the Caribbean economy and perhaps the most favoured of all the territories has been Trinidad and Tobago. Each succeeding boom has posed a recurring question. Will elevated export earnings be used for expansion of the staple economy or will they be devoted to transformation?

FOOTNOTES TO PART C

1. See Jack Harewood, "Employment in Trinidad and Tobago", C.S.O. Research Papers, 1, 1963 and ibid, "A Comparison of Labour Force Data..." in C.S.O. Research Papers, 2, 1965.
2. W.A. Lewis, "Industrialisation of the British West Indies", p.1, in Industrial Development in the Caribbean, Caribbean Commission, 1951.
3. The activities in question were: the manufacture of beer, animal feeds, cardboard containers, glass and glass products, knitted goods, wooden boxes and handles, time-recording instruments, electroplated products, moulded rubber and plastics, textiles and processed torchons.
4. Government of Trinidad and Tobago, Draft Second Five Year Plan, p.3. See also Appendix 3 of this Report, Table 3e.
5. Frank Rampersad, "Growth and Structural Change in the Economy of Trinidad and Tobago 1951-61", C.S.O. Research Papers, 1, 1963.
6. ibid, p. 132. See also Appendix C of this Report, Table 3f.
7. Appendix C, Tables 3a and 3b.
8. Appendix C, Tables 3a and 3g.
9. Appendix C, Table 6a.
10. Appendix C, Table 6a.
11. Appendix C, Tables 6b and 6d. See also, pp. 90-94 in F.A. Francis, A Review and Analysis of the System of Incentives for Industrial Development in Trinidad and Tobago, Port of Spain, 1968.
12. Ibid, p. 93 and again, p. 105.
13. A.A. Francis, "A Note on Inter-industry Relations in the Economy of Trinidad and Tobago", C.S.O. Research Papers, 2, 1965.
14. Ibid.
15. Appendix C, Table 6f.
16. For an updating of the debate started by A.W. Lewis, see, Alister Mc Intyre, "Some Issues of Trade Policy in the West Indies", in Norman Girvan and Owen Jefferson (eds), Readings in the Political Economy of the Caribbean, Kingston, 1974. See also Havelock Brewster and Clive Thomas, The Dynamics of West Indian Economic Integration, Kingston, 1967.
17. Alister Mc Intyre and Beverly Watson, Studies in Foreign Investment in the Commonwealth Caribbean, No. 1, Trinidad and Tobago, Kingston, 1970.
18. Ibid.
19. A.N.R. Robinson, The Mechanics of Independence, Cambridge, Mass., 1973.
20. Computed from Table VIII.3 in Mc Intyre and Watson, op.cit., p. 52.
21. Prime Minister's Broadcast: National Reconstruction, June 30, 1970.
22. For the official statement of position see "Perspectives for the New Society", The Nation, Port of Spain, Sept. 25, 1970.

23. pp. 3-4, Draft Second Five Year Plan. Also p.53, Draft Third Five Year Plan.
24. The Review of the Economy 1972 devoted special attention to the problem of current surplus and debt. See pp. 30-31 for debt comparisons. The following table from p. 14 speaks for itself.

Recurrent Revenue, Expenditure and Surplus: 1970-1972

	<u>1970</u>	<u>Percentage Change</u>	<u>1971</u>	<u>Percentage Change</u>	<u>1972</u>	<u>Percentage Change</u>
Recurrent Revenue	313.4	3.2	341.9	0.1	396.	15.7
Recurrent ¹ Expenditure	259.7	10.2	372.8	26.2	392.2	19.6
Surplus	53.7	-	14.1	-	33.8	-

25. In 1971, 54.5% of the unemployed had received primary education, 18.9% secondary. In the same year, 33.2% of the unemployed fell in the age group 15-19, 27.7% in the group 20-24, and 16.0% in the group 25-34. Grand total 67%. It may also be of interest to note that 40.4% of these unemployed were female.
26. Excess borrowing occurs where the amount borrowed exceeds the real transfer. See John Knapp, "Capital Exports and Growth", in Economic Journal, 1957. Excess borrowing may nevertheless be necessary to the extent that the financial institutions and the ownership patterns lead to an undermobilisation of investible funds.
27. F.A. Francis, op. cit., p. 42.
- 27b. These data are a revised version of those presented in Appendix C, Table 3b.
28. *This reference does not take account of the special controls introduced on CARICOM trade in the same year. In response to restrictions imposed by partner countries, Trinidad and Tobago placed some 49 products under control in order to protect 39 affected firms employing at December 31, 1977, an estimated 4350 persons. See pp. 14-15 in A Report of a Committee on A System of Selective Controls on imports into Trinidad and Tobago, Part of Spain.
On the Negative List is: a large number of foodstuffs, crude petroleum, chemicals and fertilizers, cement, toiletries and cosmetics, fabrics and clothing, footwear, household appliances, automobiles, tires, and other manufactured goods. Also included are peanuts, plywood, fibreboard, prefabricated doors and wall elements, brushes and brooms, utility wiring boards and switchgear.
29. The main Unions are: National Union of Government and Federated Workers (35,000), the Public Services Association (16,000), the Oil Workers Trade Union (16,000), and the All-Trinidad Sugar Estates and Factory Workers Trade Union (15,000).
30. This point has been made by Dudley Seers in his attempt to construct a suitable paradigm for the Trinidad and Tobago Economy. See his "The Mechanism of an Open Petroleum Economy" in Social and Economic Studies, Vol. 13, No. 2, June 1964.
31. See Republic of Trinidad and Tobago, Report of the Committee to Review Government Expenditure, p.8.
32. Second Five Year Plan, p. 29.
33. Appendix C contains "A note on Advertising and the Media in Trinidad and Tobago". For related data see Appendix C, Tables 7a and 7b.

APPENDIX C1A Note on Advertising and the Media* in Trinidad and Tobago*

There are at present among the print media two morning daily newspapers, a tabloid (circulation - 42,000) and a broadsheet (circulation - 62,000). There are two evening dailies, one with a circulation of 40,000 and two main weeklies with a circulation of 52,000 and 30,000. In addition there is a monthly magazine (circulation - 20,000), a quarterly (circulation - 20,000) and a number of smaller papers of far lower circulation and periodical appearance. There are two radio stations, each with A.M. and F.M. bands. There were approximately 270,000 receivers and one radio station claimed an audience of approximately 400,000. There is one television station with an estimated 110,000 sets and an average viewership of 3.5 persons per set. Pearl and Dean, the cinema advertising contracting firm reported that they have on contract 63 of the 70 cinemas in the country.

There are ten advertising agencies operating in the country representing about 200 advertisers with a local billing in 1974 by \$16 million. In addition, there was a further \$7 million of advertising placed directly in the media by advertisers. Five of the ten agencies had international affiliations ranging from 25% to full ownership, and these five handled 71% of local agency billing. The breakdown of advertising expenditure by media and the distribution by product class are shown in the accompanying tables. (See Table 7).

The typical channel of distribution for most products is from manufacturer or importer to agency, then to wholesaler, retailer and final consumer. Not invariably when a formerly imported commodity is locally manufactured, the importer (usually the agent) is instrumental or has a major interest in the enterprise. Sometimes the agency may continue to serve as agent for the manufactured product.

The researches quoted have indicated that there is little sophistication to marketing in Trinidad and Tobago. There is little or no market research, and advertising budgets are often set as a percentage of sales rather than what it will cost to attain a given market impact. There is also little or no post analysis of advertising effectiveness. The introduction of new products might often be based on the businessman's knowledge of the market, based on experience or intuition, though in most cases new products may be close substitutes to an established brand. For manufactured products produced under some incentive, a measure of protection in the form of restricted competition from imports or incentives for competing brands is often granted.

* This note is based on the research of Gordon Draper of the Department of Management Studies, U.W.I. viz. "Marketing and Development - The Case of Trinidad and Tobago" (Mimeo) and

"Advertising in Trinidad - Structure and Conduct" (Mimeo), 1976. All data refer to 1974 and were taken from the above studies.

APPENDIX C 2TABLE 1: Indicators of the Rank of Trinidad & Tobago in World Economy

<u>Economic Indicator</u>	<u>Trinidad & Tobago</u>	<u>No. of Countries Ranking</u>	
		<u>Higher</u>	<u>Lower</u>
1. Level of G.N.P. per capita (1976)	\$2,240 (U.S.)	33	92
2. Average Annual Growth Rate per capita G.N.P. (1976)	2.6%	62	63
3. Index of per capita Food Production 1974-76 (with 1965-67 = 100)	92	100	25
4. Average Annual Inflation Rate: 1960 - 70	3.6%	56	58
1970 - 76	18.6%	24	90
5. Average Annual Growth Rate:			
Agriculture (1960-70)	5.5%	33	81
Industry (1960-70)	0.5%	90	24
Services (1960-70)	5.7%	39	66
6. Percentage Share of Merchandise Exports:			
Primary Commodities (1975)	94%	26	85
Manufactures (1975)	6%	81	24
7. Food Bill: Share of Total Imports (1960)	16%	44	59
(1975)	10%	57	23
8. Debt Service; Paid Share of G.N.P. (1970)	1.5%	41	41
(1976)	5.0%	15	67
9. Net Direct Foreign Investment: \$m, US.			
1970	83	13	67
1976	82	12	51

Source: World Bank Development Report, 1978

APPENDIX C 2

TABLE 2a : Population Growth in Trinidad & Tobago
1946 - 1976 (900's)

<u>Year</u>	<u>Births</u>	<u>Deaths</u>	<u>Natural Increase</u>	<u>Net Migration</u>	<u>Net Increase</u>	<u>Estimated Population</u>	<u>% Annual Population Increase</u>
1946	-	-	-	n.a.	n.a.	563.2	
Nov 1955	n.a.	n.a.	n.a.	n.a.	n.a.	724.	3.2
Nov 1956	n.a.	n.a.	n.a.	+ .43	n.a.	745.	2.9
Nov 1957	n.a.	n.a.	n.a.	+ .88	n.a.	768.	3.0
1962	-	-	-	-	30.2	904.1	3.4
1963	32.9	6.7	26.2	+2.3	28.5	924.	2.6
1964	32.9	6.7	26.2	-2.1	24.1	951.1	2.9
1965	31.9	6.7	25.2	-3.1	22.1	973.9	2.4
1966	30.2	7.1	22.9	-5.1	17.8	994.8	1.8
1967	28.2	6.6	21.6	-8.9	12.7	1010.1	1.5
1968	28.1	7.1	21.	-9.1	11.9	1020.6	1.0
1969	25.1	7.1	18.	-15.6	2.4	1026.7	.3
1970	25.2	7.	18.2	-17.4	.8	1027.6	.1
1971	26.1	7.	19.1	- 7.2	11.9	1030.	1.1
1972	28.0	7.0	21.	-7.1P	13.9	1043.	1.3
1973	26.2	7.5	18.7	-9.6	9.1	1061.8	.8
1974	26.1	6.7	19.4	-6.7	12.7	1067.0	1.2
1975	25.8	7.2	18.6	-6.0	12.6	1081.5	1.1
1976	27.8	7.6	20.2	-2.1P	18.1	1098.6	1.6

P - Provisional Estimate

Sources: C.S.O., Annual Statistical Digest (Various Issues)

Government of Trinidad & Tobago; Draft Third Five Year Plan.

J. Harewood; A Comparison of Labour Force Data in

Trinidad & Tobago 1946-1964. C.S.O. Research Papers #2.

(J. Harewood); Employment in Trinidad & Tobago. C.S.O. Research Papers #1.

APPENDIX C 2

TABLE 2b : Population, Labour Force and Employment in
Trinidad & Tobago 1946-1976 (000's)

<u>Year</u>	<u>Popu- lation</u>	<u>Popu- lation & Over</u>	<u>Labour Force</u>	<u>Not in Labour Force</u>	<u>Employed</u>	<u>Unemp- loyed</u>	<u>% of Pop- ulation 15 yrs. & Over</u>	<u>% of 2 in Labour Force</u>	<u>% of 3 Employed</u>	<u>% of 3 Unemp- loyed</u>
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
1946	563.2	358	216	137	195	21	62.6	61.2	90.1	10
Nov 1955	724.8	423	267.4	156.0	250.1	17.3	58.3	63.2	93.5	6.6
Nov 1956	745.7	432	267.1	165.1	250.1	17.0	57.9	61.8	93.6	6.4
Nov 1957	768.2	441	258.6	183	237.8	20.8	57.4	58.6	91.9	8.1
1960	84.1	478	289	789	252	37	56.8	60.4	97	13
1962	904.1	n.a.	325	n.a.	279	46	n.a.	n.a.	85.8	14.2
Oct 1963	924	515	311	204	277	34	56.4	60.3	89	11
1964	951.1	549	346	203	299	47	57.7	63.0	86.5	13.5
1965	973.9	557	348	209	299	49	57.1	62.4	86.0	14.0
1966	994.8	569	351	218	302	49	57.1	61.6	86.1	13.9
1967	1010.1	580	366	214	312	54	57.4	63.1	85.3	14.7
1968	1020.6	588.1	363.8	224.3	311.1	52.7	57.6	61.8	85.6	14.4
1969	1027.6	596.3	368.4	227.8	318.3	50.1	58.0	61.7	86.5	13.5
1970	1026.7	593.6	362	231.6	316.8	45.2	57.8	60.9	87.6	12.4
1971	1030	610.9	367.8	243.1	321.4	46.4	59.3	60.2	87.4	12.6
1972	1043	621.0	371	250	322	49.0	59.4	59.7	86.8	13.2
1973	1067.8	627.3	376	251.4	324.1	51.9	59.07	59.9	86.2	13.8
1974	1067.0	654.2	394.3	259.9	336	58.3	61.3	60.2	85.3	14.7
1975	1081.5	670.7	395.8	274.9	335.7	60.1	62.0	59.0	84.9	15.1
1976	1098.6	697.9	400.6	297.3	340.5	60.1	63.5	57.3	85.0	15.0
Av 64-76	1.2	2.0	1.4	3.3	1.09	2.2				

Av: Average Annual Increase

Sources: J. Harewood; Employment in Trinidad & Tobago: C.S.O., Research
Papers#1 1962.

A Comparison of the Labour Force in Trinidad & Tobago
1946-1964: C.S.O.; Research Papers#2 1965.

C.S.O.; Labour Forge (Various issues).

Annual Statistical Digest. (Various issues).

APPENDIX C 2

TABLE 2c : Employment By Sector: Trinidad & Tobago
(in Thousands), 1956 - 1976

YEAR	SECTOR					
	Agriculture	Mining & Manufacturing	Construction	Commerce	Transport & Communication	Services
1966	62.8	56.6	36.1	49.7	22.1	72.5
1967	68.3	61.9	35.2	48.6	21.1	72.4
1968	67.4	53.3	39.6	46.2	22.1	76.2
1969	73.2	57.0	42.9	46.2	23.0	72.7
1970	81.8	66.8	38.4	43.6	21.7	68.0
1971	71.8	64.0	47.8	44.3	21.1	72.5
1972	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1973	56.2	63.5	47.2	56.2	25.5	75.4
1974	58.7	63.6	42.9	62.4	29.6	78.8
1975	49.7	66.6	45.5	63.	28.	83.0
1976	54.4	72.6	59.0	68,4	31,1	85.1

Source: C.S.O, Labour Force (Various Issues)

APPENDIX C 2TABLE 2d: Emigration of skilled and Qualified Manpower by
Country 1962 - 1968

Occupation	U.S.	U.K.	CANADA	TOTAL
Doctors and Dentists	39	7	97	143
Engineers	74	4	92	170
Teachers	113	59	612	784
Nurses	480	39	160	679
Science Graduates	33	-	52	85
Other Professionals	234	5	585	824
Total Professionals	973	114	1,598	2,685
Other Skilled and Qualified	5,243	568	2,416	8,227
Total Skilled and Qualified	6,216	682	4,014	10,912

Source: The Emigration of Professional, Supervisory, Middle Level and Skilled Manpower from Trinidad and Tobago 1962 - 1968 - Brain Drain, C.S.O.

Port Of Spain, 1970, p. 22.

APPENDIX C 2

TABLE 3a: Percentage Contributions to G.D.P. (Current Prices) at Factor Cost
- Trinidad & Tobago: Selected Sectors, 1951-74 \$m. TT.

SECTOR	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974
Agriculture, Quarrying	18.1	17.7	17.9	18.7	17.6	15.2	13.4	13.7	12.3	12.5	11.8	10.8	10.8	9.1	9.0	8.3	8.1	8.3	7.8	7.6	7.3	4.8	4.4	3.9
Petroleum Asphalt Mining & Refining	30.3	28.6	31.3	29.3	29.2	33.6	34.1	32.4	32.7	30.4	30.0	29.1	28.1	26.8	24.1	24.4	25.4	24.0	21.8	20.4	18.3	20.5	24.4	41.2
Manufacturing (excluding Sugar)	14.1	13.6	13.2	13.3	12.5	11.0	11.2	12.7	12.9	12.4	12.5	10.0	10.0	14.4	15.2	15.4	15.9	17.1	17.1	7.2	17.9	11.3	10.4	8.2
Construction	2.7	2.7	2.4	2.5	3.0	3.0	3.0	4.5	4.5	4.7	5.2	5.5	5.8	5.1	5.0	4.4	3.9	4.3	4.3	4.4	5.2	7.6	7.9	5.6

Real G.D.P. of Selected Sectors; Trinidad & Tobago 1960-72 (1960 prices)

Agriculture \$00 m.	1.08	1.11	1.04	1.04	.91	.94	.92	.94	.99	.97	.95	.93	.88
% Contribution to Real G.D.P.	12.7	12.1	10.8	10.1	8.6	8.7	8.0	7.7	8.3	8.0	7.7	7.3	6.7
Petroleum & Asphalt \$00 m.	2.6	2.9	2.8	2.7	2.7	2.5	2.7	3.0	2.8	2.7	2.6	2.5	2.5
% Contribution to Real G.D.P.	30.5	31.8	29.1	26.4	25.7	23.3	23.6	24.7	23.5	22.3	21.1	19.6	19.2
Manufacturing \$00 m.	.91	.97	1.2	1.4	1.6	1.6	2.3	2.06	2.00	2.1	2.3	2.3	2.4
% Contribution to Real G.D.P.	10.7	10.6	12.5	13.7	15.2	14.9	20.1	17.0	17.0	17.6	18.6	18.1	18.4
G.D.P. \$00m.	8.5	9.1	9.6	10.2	10.5	10.7	11.4	12.1	11.9	12.1	12.3	12.7	13.

Sources: C.S.O. National Accounts (Various Issues);
Annual Statistical Digest 1971/72

The Gross Domestic Product of the Republic of T.T. 1966-1976.
(measured in hundreds of millions of TT\$.)

APPENDIX C 2

TABLE 3b : G.D.P.(Current Prices) at Factor Cost; Capital Formation;
Direct Foreign Investment, Net Investment Income, 1951 - 1974 \$m. TT.

<u>YEAR</u>	<u>G.D.P.</u> <u>\$ m.</u>	<u>Capital</u> <u>Formation</u>	<u>Capital</u> <u>Formation</u> <u>as % Share</u> <u>of G.D.P.</u>	<u>Direct</u> <u>Foreign</u> <u>Investment</u> <u>(D.F.I.) \$m.</u>	<u>D.F.I. as</u> <u>share % of</u> <u>previous</u> <u>year's G.D.P.</u>	<u>Net</u> <u>Income</u> <u>from</u> <u>D.F.I.</u>	<u>Net Income</u> <u>from D.F.I.</u> <u>% share of</u> <u>G.D.P.</u>
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1951	308	80.	26	28	-	32	10
1952	337	88	26	35	11	26	8
1953	379	91	24	25	7	38	10
1954	404	85	21	41	11	34	8
1955	476	124	26	36	9	41	9
1956	556	133	24	50	11	75	13
1957	695	174	25	102	18	115	17
1958	719	223	31	72	10	97	13
1959	799	272	34	109	15	126	16
1960	866	268	31	76	10	98	11
1961	955	248	26	61	7	126	13
1962	1006	295	29	73	8	121	12
1963	1094	306	28	118	12	141	13
1964	1149	310	27	67	6	143	12
1965	1188	356	30	126	11	126	11
1966	1246	262	21	50	4	129	10
1967	1337	267	20	56	4	153	11
1968	1522	304	20	50	4	154	10
1969	1561	328	21	84	6	182	12
1970	1623	454	28	168	11	162	10
1971	1796	339	30	254	16	149	8
1972	2032	610	30	196	11	152	7
1973	2466	617	25	136	7	166	7
1974	3814	725	19	82	3	233	6
<u>OVERALL</u>	28327	7139	25	2095	9	2819	10

Sources: C.S.O.; National Accounts, (Various Issues)
and unpublished data.

APPENDIX C 2TABLE 3c: Production of Oil and Sugar in
T.T. 1951 - 1976

<u>Year</u>	<u>Crude Petroleum</u> <u>m. Barrels</u>	<u>Refinery Throughput</u> <u>m. Barrels</u>	<u>Sugar</u> <u>'000 tons</u>
1951	20.8	35.0	141
1952	21.3	36.4	137
1953	22.3	37.0	153
1954	23.6	36.9	173
1955	24.9	40.1	193
1956	28.9	44.8	161
1957	34.1	50.5	168
1958	37.4	60.3	183
1959	40.9	68.9	181
1960	42.4	77.5	218
1961	46.0	103.3	246
1962	48.9	109.3	201
1963	48.7	115.4	227
1964	49.7	131.0	227
1965	48.9	137.9	250
1966	55.6	144.1	206
1967	65.0	137.9	250
1968	66.9	150.7	240
1969	57.4	154.1	237
1970	51.0	154.8	216
1971	47.1	145.5	213
1972	51.2	144.4	231
1973	60.6	141.4	181
1974	68.1	130.8	183
1975	78.6	85.7	160
1976	77.8	117.6	201
TOTAL	1218.1	2593	5125
Av 1951 - 62	32.6	58.3	180
Av 1963 - 74	55.9	140.8	217
Av 1951 - 74	44.2	99.6	199
Av 1974 - 76	74.8	111.3	181

Sources: P.B. Rampersad; Growth and Structural Change in the Economy of T.T. 1951 - 1961: C.S.O. Research Papers #1, Dec. 1963,

Government of Trinidad & Tobago; Draft Third Five Year Plan 1969 - 1973.

C.S.O.; The Gross Domestic Products of the Republic of Trinidad & Tobago 1966 - 1976.

Government of Trinidad & Tobago; Review of the Economy (Various issues)

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TABLE: 3d : Structure of Output of the Manufacturing Sector 1966 - 1972
\$m. T.T.

Item:	1966		1967		1968		1969		1970		1971		1972	
	.Quantity.	%	.Quantity.	%	.Quantity.	%	.Quantity.	%	.Quantity.	%	.Quantity.	%	.Quantity.	%
Food & Related	24.4	33.5	27.8	31.4	31.1	30.1	38.8	29.8	46.8	31.0	47.8	29.0	53.6	27.3
Consumer Durables	25.9	35.7	35.4	40.0	43.1	41.8	56.7	43.6	64.5	42.8	74.4	45.1	90	45.8
Other Manufactured	22.4	30.8	25.3	28.6	28.8	27.9	34.4	26.4	39.4	26.1	42.6	25.3	52.7	26.0
TOTAL	72.7	100	88.5	100	103.0	100	129.9	100	150.7	100	164.8	100	196.3	100

Sources: C.S.O., The Gross Domestic Product of Trinidad & Tobago - 1966 - 1976
C.S.O., Annual Statistical Digest - (Various Issues)

APPENDIX C2 : TABLE 3a : INTER INDUSTRY RELATIONS IN T.T: INPUT STRUCTURES

	Oil	Alcoholic Beverages and Tobacco	Food Manufacturing	Other Manufacturing	Transportation	Distribution	Services	Construction	Public Utilities	Sugar Manufacturing	Sugar Growing	Other Agriculture	Banks and Financial Institutions
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	.2080	.0048	.0139	.0324	.1312	.0054	.0172	.0402	.0406	.0059	-	.0046	-
2	-	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	.0199	-	-	.0027	-	-	-	-	-	.0016	-
4	.0049	.0724	.0787	.0214	.1103	.0306	.0696	.1704	.0097	.0142	.0714	.0454	.0018
5	.0081	-	.0071	.0064	-	.0323	.0281	.0297	.0168	.0185	.0298	.0072	-
6	.0155	.0139	.0259	.0566	.0040	-	.0026	.0691	.0031	.0185	.0304	.0367	-
7	.0036	.0281	.0199	.0168	.0632	.0317	.0208	-	.0276	.0110	.0058	.0033	.0188
8	.0005	-	.0193	.0062	-	.0101	.0188	-	.0014	-	-	-	.0976
9	.0032	.0061	.0063	.0113	.0046	.0434	.0074	.0009	.0388	.0104	.0087	.0039	.0017
10	-	.0163	.0302	-	-	.0008	-	-	-	-	-	.0013	-
11	-	-	-	-	-	-	-	-	-	.5079	-	-	-
12	-	.0163	.1368	.0442	-	-	.0014	.0039	-	-	-	.0013	-
13	.0002	-	-	.0081	-	.0209	.0327	-	-	-	.0084	-	.0318
Sub-total	.2441	.1578	.3581	.2035	.3132	.1780	.1986	.3142	.1379	.5864	.1545	.1063	.1517
Imports	.3930	.2522	.1914	.2227	.0250	.0838	.1173	.1756	.2942	.0666	.0234	.0498	.0223
Wages and Salaries	.0686	.1681	.1195	.1276	.2627	.2127	.2146	.2984	.4927	.1372	.3998	.2393	.1246
Government	.0664	.3114	.0236	.0663	.0532	.0348	.0556	.0331	.0205	.0356	.0433	.0138	.0902
Depreciation	.0965	.0287	.0209	.0328	.1159	.0111	.0387	.0192	.0733	.0799	.0283	.0221	.0036
Profit	.1314	.0818	.2865	.3470	.2300	.4796	.3753	.1595	.0223	.0943	.3507	.5688	.6076
Sub-total	.7559	.8422	.6419	.7965	.6868	.8220	.8014	.6858	.8621	.4136	.8455	.8937	.8483
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Output (\$m.)	800	25	50	162	63	199	107	114	62	46	24	78	78

Source: A.A. Francis, A note on Inter Industry Relations in the Economy of T.T. 1962: C.S.O. Research Papers #2 p.p. 60/61.

APPENDIX C2: TABLE 3E: INTER INDUSTRY RELATIONS IN T.T: DISTRIBUTION STRUCTURE 9

	Oil	Alcoholic Beverages and Tobacco	Food Manufacturing	Other Manufacturing	Transportation	Distribution	Services	Construction	Public Utilities	Sugar Manufacturing	Sugar Growing	Other Agriculture	Banks and Financial Institutions
	1	2	3	4	5	6	7	8	9	10	11	12	13
1	.2080	-	-	.0243	.1023	.0625	.0272	.0035	.0415	-	-	-	.0016
2	.0001	-	-	.0110	-	.0017	.0065	-	.0024	.0087	-	.0051	-
3	.0009	-	.0199	.0241	.0058	.0085	.0093	.0084	.0050	.0327	-	.0867	-
4	.0086	-	-	.0214	.0166	.0463	.0255	.0087	.0297	-	-	.0916	.0168
5	.0103	-	-	.0429	-	.0013	.0374	-	.0047	-	-	-	-
6	.0014	-	.0109	.0375	.1017	-	.0591	.0175	.1392	.0033	-	-	.0528
7	.0023	-	-	.0457	.0474	.0014	.0208	.0175	.0127	-	-	.0019	.0442
8	.0087	-	-	.1201	.0539	.0398	-	-	.0016	-	-	.0057	-
9	.0031	-	-	.0037	.0165	.0010	.0161	.0008	.0388	-	-	-	-
10	.0003	-	-	.0040	.0135	.0043	.0047	-	.0077	-	.9749	-	-
11	-	-	-	.0195	.0113	.0037	.0013	-	.0034	-	-	-	.0025
12	.0005	-	.0040	.0219	.0090	.0145	.0024	-	.0049	.0022	-	.0013	-
13	-	-	-	.0009	-	-	.0139	.0671	.0022	-	-	-	.0318
Sub-total	.2393	-	.0348	.3679	.3778	.1829	.2242	.1234	.2938	.0468	.9749	.1924	.1497
Government	.0013	-	-	.0484	.0384	.0189	.0339	.0223	.0267	-	-	.0178	.0461
Households	.0119	.9347	.8402	.4102	.4903	.5761	.5241	-	.1762	.1110	-	.8218	.8052
Various Capital Institutions	.0719	-	-	.0594	.0213	.0773	.0138	.8544	.0046	.0821	.0281	.0006	-
Attitudes to Stocks	.0114	-.0358	-.0181	-.0284	-	-	-	-	-	-.0223	-	.0082	-
Profits	.0041	.1009	.1411	.1421	.0723	.1469	.2044	-	.4990	.7873	-	.1592	-
Sub-total	.7697	1.0000	.9652	.8321	.6222	.8171	.7758	.8768	.7082	.8632	.0281	.8076	.8502
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total Output (\$mm.)	899	25	50	162	69	199	107	114	62	46	24	78	78

Source: A.A. Francis, A note on Inter Industry Relations in the Economy of T.T- 1962; C.S.O. Research Papers #2 p.p. 65/66.

TABLE 3g: Percentage Contribution to Real Gross DomesticProduct at Factor Cost 1951-61

	1951	1952	1953	1954	1955	1956
All sectors	100.0	100.0	100.0	100.0	100.0	100.0
Agriculture	17.3	15.8	16.5	16.5	16.5	15.7
Oil and Asphalt	28.9	28.2	28.1	27.2	27.4	29.5
Sugar	2.6	2.3	2.5	2.7	2.6	2.0
Other Manufacturing	10.1	10.0	9.8	10.1	9.5	9.9
Construction	2.6	2.6	2.2	2.5	2.9	3.3
General Government (including Public Utilities)	14.3	15.1	15.2	15.2	13.7	13.3
All Other	24.2	26.1	25.7	25.7	27.4	26.2

	1957	1958	1959	1960	1961
All Sectors	100.0	100.0	100.0	100.0	100.0
Agriculture	14.8	13.8	12.4	12.7	12.1
Oil and Asphalt	30.3	30.6	31.4	30.7	32.0
Sugar	1.9	1.9	1.7	2.0	2.0
Other Manufacturing	10.4	10.6	10.7	10.7	10.6
Construction	3.4	4.7	4.7	4.7	4.9
General Government (including Public Utilities)	12.2	11.9	11.8	12.2	12.1
All Other	27.0	26.5	27.2	27.0	26.3

TABLE 3h: Real Import Content of Demand Components 1951-61

(percentage)

	1951	1954	1956	1958	1960	1961
	(1)	(2)	(3)	(4)	(5)	(6)
Domestic Product at Market Prices	58.2	60.8	52.9	61.6	61.8	64.5
Fixed Capital Formation	50.5	47.3	43.1	47.4	47.6	44.3
Change in Stocks	95.3	46.8	140.0	84.3	38.1	46.9
Private Consumption Expenditure	38.0	44.0	42.6	44.7	45.4	43.3
Government Consumption Expenditure	3.7	4.2	8.8	5.5	5.3	5.4
Export of Goods and Services	32.9	34.2	26.2	31.2	31.3	38.1

Source: Frank Rampersad "Growth and Structural Change in the Economy of Trinidad and Tobago 1951 - 1961"; C.S.O. Research Papers # 1, December 1963.

APPENDIX C2TABLE 4a : Distribution of Households by Income Source

Total Monthly Household Income \$T.T.	No. of Households Receiving; 1971/72			
	(1) Wages/ Salaries	(2) Interest, Rents & Dividends	(3) Transfers*	(4) Miscellany
25	41	2	103	11
25 - 49	78	-	76	51
50 - 74	91	3	38	49
75 - 99	87	1	20	47
100 -124	109	1	14	23
125 -149	93	2	5	36
175 -199	109	-	4	43
200 -299	375	1	12	100
300 -599	433	1	7	125
600 -999	149	-	1	43
1000+	79	-	1	37
Total No. of Households	1801	12	284	595
% of Total households in Sample	65.53	.44	10.35	21.68
Average Household Income	\$322.	\$108.	\$67.	\$330.
Gini Ratio	0.46	0.43	0.55	0.52

Source: C.S.O.; Household Budgeting Survey of Trinidad & Tobago 1971/72.

R. Henry; A note on Income Distribution and Poverty in Trinidad & Tobago. C.S.O. Research Papers#8.

Category (2): Consists of earnings with income derived from interests on bank deposits etc; Rents; Dividends; and Business and Professional Income.

* including petty odd jobs.

Category (4): Consists of a mixture of incomes from more than one of categories 1, 2, and 3.

APPENDIX C2TABLE 4b : Indices of Concentration for Selected Countries (Various Years)

<u>Country</u>	<u>Index</u>
Great Britain (1951/52)	33
U.S.A. (1950)	35
Italy (1948)	37
Denmark (1952)	37
Sweden (1948)	37
Netherlands (1950)	39
West Germany (1950)	39
Trinidad & Tobago (1957/58)	40
Puerto Rico (1953)	40
Ceylon (1952/53)	43
Guatemala (1947/48)	44
India (1950)	44
Mexico (1957)	52
Jamaica (1958)	53

Source: E. Ahiram; Income Distribution
in Trinidad & Tobago S.E.S. Vol.15 #2

TABLE 4c : Distribution of Wage Earners and Own Account Workers in Trinidad & Tobago 1946 & 1961

<u>Year</u>	<u>No. of Workers</u>	<u>No. of Own Account Workers</u>	<u>% as Own Account Workers</u>	<u>No. as Wage Earners</u>	<u>% as Wage Earners</u>
1946	140	40	28.5	100	71.5
1961	127	27	21.2	100	78.8

Source: Government of Trinidad & Tobago
Draft Second Five Year Plan p. 144

APPENDIX C 2

TABLE 4d : Income Shares of Deciles of Households, Trinidad & Tobago
1971/72; 1975/76)

Deciles of Households	<u>1957 / 1958*</u>		<u>1971 / 1972**</u>		<u>1975 / 1976*</u>		<u>% Charges 1958 - 1972</u>	<u>% Charges 1958 - 1976</u>
	<u>Non-Cumulative</u>	<u>Cumulative</u>	<u>Non-Cumulative</u>	<u>Cumulative</u>	<u>Non-Cumulative</u>	<u>Cumulative</u>		
1st - 2nd	3.4	5.4	2.2	2.2	2.7	2.7	(35.2)	7.8
3rd	3.8	7.2	2.9	5.1	3.5	6.2	(23.6)	(7.9)
4th	5.3	13.5	4.5	9.6	5.4	11.6	(15.9)	+ 1.8
5th	6.7	19.2	5.9	15.5	7.4	19.0	(11.9)	1.1
6th	7.9	27.1	7.4	22.9	8.4	27.4	(6.3)	6.3
7th	11.1	38.2	9.4	32.3	9.6	37.0	(15.3)	(13.5)
8th	13.2	51.4	12.5	44.8	12.9	49.9	(5.3)	(2.2)
9th	15.3	66.7	17.4	62.2	18.0	67.9	13.7	17.6
10th 1st 5%	10.8	77.5	13.3	75.5	11.9	79.8	23.1	10.1
10th 2nd 5%	22.5	100.0	24.5	100.0	20.2	100.0	8.9	(10.2)
	100.0	-	100.0	-	-	-	-	/-

*From E. Ahiram. S.E.S. Vol. 15 #2. ** From R. Henry C.S.O. Research Paper #8
(bracketed numbers are negative)

Distributions for 1971/72 1975/76 Computed from Data in C.S.O. Household Budgetary Surveys 1971/72 and 1975/76

Concentration Coefficients for Trinidad & Tobago 1957/8, 1971/72 and 1975/76

APPENDIX C 2TABLE 4e : Measures of Absolute Poverty, Trinidad & Tobago (with 33.3% Estimator) 57/58; 71/72; 75/76

Year	Estimated % Poor	No. of Households . No. of Persons	
1957/58	n.a.	n.a.	n.a.
1971/72	35.2	82,133	348,202
1975/76	34.8	82,250	378,350

Source: C.S.O., Household Budgetary Survey Reports:
1971/72; 1975/76

TABLE 4f : Percentage Income Shares of Households in Rural and Urban Trinidad & Tobago 1957/58

Groups % Households	Trinidad and Tobago	Urban	Rural
0 - 20	3.4	3.5	3.5
21 - 40	9.1	8.2	9.7
41 - 60	14.6	13.5	15.8
61 - 80	24.3	19.0	25.6
81 - 90	15.3	15.5	16.6
91 - 100	33.3	40.3	25.7
Gini Index	45	49	41

Source: E. Ahiram; Distribution of Income in Trinidad & Tobago, and comparison with Distribution in Jamaica: S.E.S. Vol. 15 #2, 1966 p.110

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TABLE 4g : Distribution of Households in Urban-Rural Trinidad & Tobago by Monthly
Income Groups 1975/76

Monthly House- hold Groups \$	Trinidad and Tobago			Urban			Rural		
	(1) No. of Households	(2) No. of House- holds as % of Total House- holds	(3) Cumulative %	(4) No. of Households	(5) No. of house- holds as % of Total House- holds	(6) Cumulative %	(7) No. of Households	(8) No. of house- holds as % of Total House- holds	(9) Cumulative %
- 50	288	9.1	9.1	133	8.5	8.5	95	10.2	18.2
.50 - 99	177	7.1	16.2	96	6.1	14.6	81	8.7	18.9
100 -199	303	12.2	28.4	179	11.5	26.1	124	13.3	32.2
200 -299	369	14.8	43.2	216	13.8	39.9	153	16.4	48.6
300 -499	600	24.1	67.3	376	24.1	64.0	224	24.0	72.6
500 -699	307	12.3	79.6	190	12.2	76.2	117	12.6	85.2
700 -899	204	8.2	87.8	143	9.2	85.4	61	6.5	91.7
900-1099	117	4.7	92.5	78	5.0	90.4	39	4.2	95.9
1100-1299	62	2.5	95.0	48	3.1	93.5	14	1.5	97.4
1300-1499	45	1.3	96.8	30	1.9	95.4	15	1.6	99.0
1500+	81	3.2	100	72	4.6	100	9	1.0	100.0
TOTAL	2493	100	100	1561	100	100	932	100	100

Source: C.S.O., Household Budgetary Survey 1975/76 Report #1

APPENDIX C 2TABLE 4h : Poverty Lines and Poverty in Trinidad & Tobago
by Household Size 1971/72; 1975/76

No. of persons in House.-hold	Average Monthly Threshold Income 1971/72 \$TT.	Average Monthly Threshold Income 1975/76 \$TT.	No. of House-holds in T. & T. 1975/76	No. of Poor 1971/72.	% Poor 1971/72.	No. of Poor 1975/76.	% Poor 1975/76.	Poverty lines using ½ mean Income
1	64	115.00	379	202		181	47.7	110
2	93	167.30	345	124		128	37.1	171.3
3	114.00	205.70	284	108		83	29.2	220.7
4	140.00	253.50	330	108		94	28.4	278.8
5	161.00	291.10	282	96		97	34.3	237.5
6 +	183.00	330.50	873	328		285	32.6	277.5
			2493	966	35.1	868	34.8	37%

Sources: R. Henry; Income Distribution and poverty in Trinidad and Tobago: C.S.O. Research Papers#8 p. 16.

C.S.O., Household Budgetary Survey 1971/72 and 1975/76

- * The Threshold income is the minimum a household must have for a tolerable existence.

TABLE 4i : Percentage Distribution of the Poor Households
and Population by Area. 1971/72

Area	% of House-hold in H.H.B.S.	% of Population. 1971/72	% Poor Households. by Area	% Poor within Area
Port Of Spain	8.16	6.23	5.80	25.00
San Fernando	3.76	3.22	2.48	23.30
St. George (including Arima)	37.35	39.01	27.23	25.66
Caroni	11.19	10.93	12.15	41.37
Nariva/Mayaro	3.21	2.76	5.07	55.68
St. Andrews	4.85	4.99	6.73	48.87
Victoria	15.67	17.77	20.60	46.28
St. Patrick	11.95	11.44	14.49	42.68
Tobago	3.06	3.64	4.45	40.57

Source: R. Henry; A Note on Income Distribution Op. cit.

C.S.O., Household Budgetary Survey 1971/72

APPENDIX C 2TABLE 4j : Distribution of the Poor by Race in Trinidad & Tobago 1971/72

<u>Race</u>	<u>No. in Sample</u>	<u>Race as No. in Sample</u>	<u>No. of Poor Households by Race</u>	<u>Percentage Poor Households by Race (within)</u>	<u>Poor Households as a Percentage of Total Households</u>
African	1390	50.66	446	32.09	45.17
White	36	1.31	3	8.33	.31
Indian	934	34.04	407	43.58	42.13
Chinese	19	0.69	2	10.53	.21
Mixed	290	10.57	86	29.66	8.90
Other	52	1.86	16	31.37	1.66
Not Stated	23	0.87	6	25.0	0.62
TOTAL	2744	100.00	966	35.2	100

Source: R. Henry; A Note on Income Distribution and Poverty in Trinidad & Tobago. C.S.O. Research Paper No. 8

TABLE 4k : Colour Distribution of the Business Elite in Trinidad & Tobago

<u>Race</u>	<u>Very Fair</u>	<u>Fair</u>	<u>Light Brown/ or High Brown</u>	<u>Brown</u>	<u>Black</u>	<u>Total</u>	<u>% of Total</u>
White	111	13	-	-	-	124	53.2
Off White	15	20	1	-	-	36	15.4
Chinese		20	-	-	-	20	8.5
Mixed		4	20	-	-	24	10.3
Indian			5	12	3	29	12.4
African			2	4	3	9	3.8
Total (and %)	126 (55%)	57 (23%)	28 (12%)	16 (7%)	6 (3%)	233 (100%)	

Source: Acton Camejo; Race Discrimination in Employment in the Private Sector in Trinidad & Tobago: A Study of the Business Elite and the Social Structure: S.E.S. Vol. 20 #3. 1977

APPENDIX C 2TABLE. 41 : Distribution of the Business Elite by Race and by Process of Entry into the Elite:

<u>Race</u>	<u>Inheritors</u>	<u>%</u>	<u>Own Account</u>	<u>%</u>	<u>Hired</u>	<u>%</u>	<u>Total</u>	<u>%</u>
White	29	23	18	14	78	63	125	100
Off White	18	54	6	18	9	28	33	100
Chinese	9	45	6	30	5	25	20	100
Mixed	5	19	7	25	14	56	26	100
African	-	-	2	22	7	78	9	100
Indian	10	50	7	35	3	15	20	100
TOTALS	71		46		116		233	

Source: Acton Camejo; Racial Discrimination in
Employment in the Private Sector in Trinidad & Tobago.
A Study of the Business Elite and the Social Structure:
S.E.S. Vol. 20 #3,

TABLE 5a : Characteristics of Households in Trinidad & Tobago; Income, Expenditure and Aggregate Spending Patterns. 1971/72

Monthly Household Income	Monthly Average Household Income	Monthly Average Household Expenditure	Difference	$\frac{E}{I}$ Ratio	% Over Spending/Saving
T.T.					
All Groups	290.58	346.87	- 55.49	1.19	(19.1)
- \$ 50	17.35	212.75	-195.44	12.26	(1226.2)
50 - 99	71.88	155.55	-141.4	2.16	(196.7)
100 - 199	150.81	234.62	- 83.81	1.56	(55.6)
200 - 299	240.94	332.99	- 92.05	1.38	(38.2)
300 - 499	383.43	474.31	- 90.88	1.24	(23.7)
500 - 699	585.64	595.84	- 10.2	1.02	(1.7)
700 - 899	785.12	809.83	- 24.71	1.03	(3.1)
900 - 1099	979.40	829.62	-149.78	.85	15.3
1100 - 1299	1170.85	953.98	-216.87	.81	18.5
1300 - 1499	1371.22	1113.66	257.56	.81	18.8
1500 +	1977.7	1147.78	828.92	0.58	41.9

(Bracketed numbers are negative)

Source: C.S.O. Household Budgetary Survey Reports: 1971/72

TABLE: 5b : Characteristics of Households in Trinidad & Tobago Monthly Income, Expenditure and by Aggregate Spending Patterns 1975/76:

Monthly Household Income	Monthly Average Household Income	Monthly Average Household Expenditure	Difference	$\frac{E}{I}$ Ratio	% Over Spending/Saving
All Income Groups	457.5	650.73	- 293.22	1.42	(42.2)
50	20.5	183.26	- 162.76	8.94	(790.)
150 - 99	71.7	200.80	- 129.1	2.8	(180.)
200 - 199	147.8	328.40	- 180.6	2.22	(120.)
300 - 499	388.6	567.89	- 179.29	1.46	(46.1)
500 - 699	582.3	788.77	- 206.47	1.35	(35.5)
700 - 899	783.3	1099.76	- 316.46	1.4	(40.4)
900 - 1099	988.3	1177.65	- 189.35	1.19	(19.2)
1100 - 1299	1200.9	1334.81	- 133.91	1.11	(11.2)
1300 - 1499	1376.4	1734.42	- 358.0	1.26	(26.0)
1500 - 1699	1577.1	1861.11	- 284.01	1.18	(18.0)
1700 - 1889	1799.8	1766.94	32.86	.98	1.8
1900 +	2456.4	2258.39	198.01	.92	8.1

Sources: C.S.O. Household Budgetary Survey Reports 1975/76

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TABLE 5c: Distribution of Expenditure by Total Household Income per Month 1971-72Average Expenditure on Items:

Household Income Groups	Average Expenditure (1)	Food & Beverages (2)	Stimulants (3)	Clothing (4)	Accommodation (5)	(6) Consumer Durables	(7) Education	(8) Other	(9) Own Account Food
All Groups	\$TT. 346.07	103.32	16.53	54.49	44.11	42.8	6.99	56.45	6.5
0 - 19	120.52	40.74	6.25	11.46	16.79	7.72	.58	13	3.83
20 - 49	110.23	48.03	5.10	15.45	17.49	6.07	1.14	10.53	6.87
50 - 99	155.55	61.91	7.29	23.56	22.93	8.41	2.29	19.10	7.60
100 - 199	234.62	84.36	14.49	42.51	22.94	20.3	3.78	35.52	6.80
200 - 299	332.99	106.59	18.08	52.62	35.23	39.15	6.66	63.97	8.45
300 - 499	474.31	135.21	23.51	78.71	62.48	64.44	8.69	74.99	5.15
500 - 699	595.84	162.97	21.50	100.98	83.27	62.62	16.97	111.74	7.37
700 - 899	809.83	185.20	29.33	122.00	98.22	160.91	13.53	137.01	5.95
900 - 1099	829.62	189.09	27.55	126.08	146.52	103.23	21.71	154.47	3.89
1100 - 1299	953.98	197.28	24.96	122.6	139.37	151.66	27.61	175.16	1.12
1300 - 1499	1113.66	188.53	29.55	120.00	212.27	282.51	14.81	184.45	1.87
1500+	1147.78	263.63	55.04	132.21	136.27	175.36	48.25	222.23	2.16

Source: C.S.O., Household Budgetary Survey Report 1971/72

*Own Account Food is not included in the overall Average Expenditure.

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TABLE 5d: Percentage Distribution of Expenditure by Monthly Household Income 1972/72

Household Income Groups	Average Expenditure	Food & Beverages*	Stimulants*	Clothing	Accommodation	Consumer Durables*	Education	Other	% Own Account Food*
0 - 19	100	39.7	6.09	11.17	16.3	7.5	.56	12.68	3.73
20 - 49	100	43.5	4.62	14.01	15.36	5.5	1.03	9.55	6.23
50 - 99	100	38.9	4.68	15.14	14.74	5.4	1.47	12.27	4.88
100 - 199	100	35.95	6.17	18.11	12.76	8.65	1.61	15.13	2.89
200 - 299	100	32.00	5.42	15.80	10.97	11.75	2.00	19.97	2.53
300 - 499	100	28.50	4.95	16.59	13.17	13.58	1.83	15.81	01.08
500 - 699	100	27.35	3.6	16.94	13.97	10.50	2.84	18.75	1.23
700 - 899	100	22.85	3.62	15.06	12.12	19.86	1.67	16.91	.73
900 - 1099	100	22.79	3.32	15.19	17.65	12.44	2.61	18.61	.46
1100 - 1299	100	20.57	2.6	12.85	14.60	15.89	2.89	18.36	.11
1300 - 1499	100	16.92	2.6	10.77	19.06	25.36	1.32	16.56	.10
1500 +	100	22.96	4.7	11.51	12.21	15.27	4.20	19.36	.18
ALL	100	29.85	4.77	15.74	12.74	12.36	2.0	16.31	1.87

Source: C.S.O.; Household Budgetary Survey 1971/72

*Own Account Food not included in Total for all groups

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TABLE 5e : Distribution of Expenditure by Total Household Income 1975/76

Monthly Household Income	All Income Groups	Food	Stimulants	Clothing	Fuel/Light & Accommodation	Consumer Durables	Education	Other	Own Account Food*
Income Groups	651.34	181.59	29.50	105.09	137.11	50.21	11.37	134.03	11.87
0 - 19	246.31	82.89	10.77	41.39	58.8	10.67	2.69	39.01	10.08
20 - 49	125.34	51.75	3.18	12.71	38.31	2.14	0.99	16.47	6.13
50 - 99	201.25	78.55	6.58	25.32	51.1	7.7	3.04	28.97	9.59
100 - 199	328.86	122.60	17.45	55.06	61.09	15.89	3.43	53.2	10.59
200 - 299	480.40	169.59	29.13	70.84	85.08	27.65	6.76	96.31	13.53
300 - 499	569.15	174.48	30.63	98.06	105.61	38.2	9.75	122.32	13.35
500 - 699	489.24	226.59	38.18	138.57	142.27	61.23	13.57	168.79	12.13
700 - 899	1100.21	266.80	40.70	194.85	234.78	96.17	19.32	247.45	14.60
900 - 1099	1178.10	265.88	53.86	185.76	249.72	123.59	30.87	268.24	12.25
1100 - 1299	1335.23	273.36	48.99	239.35	302.19	136.78	28.98	304.98	9.37
1300 - 1499	1713.97	344.11	64.54	244.69	380.19	164.17	40.04	475.5	11.32
1500+	2017.18	412.86	50.99	245.34	639.8	193.77	33.29	441.15	7.79

*Own Account Food not included in Total for all groups

Source: C.S.O., Household Budgetary Survey Report: 1975/76

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TABLE 5f : Percentage Distribution OF Expenditure by Total Household Income 1975/76

Monthly House- hold Income	All Groups	Food	Stimulants	Clothing	Accommodation	Consumer Durables	Education	Other	Own Account Food*
All	100	27.8	4.52	16.13	21.05	7.7	1.74	20.57	1.82
0 - 19	100	33.65	4.37	16.80	23.87	4.33	1.09	15.83	4.09
20 - 49	100	41.28	2.53	10.14	30.56	1.70	7	13.14	4.89
50 - 99	100	39.03	3.26	12.58	25.39	3.82	1.5	14.39	4.76
100 - 199	100	37.3	5.3	16.74	18.57	4.83	1.04	16.17	3.22
200 - 299	100	35.30	6.06	14.74	17.71	5.75	1.40	20.04	2.81
300 - 499	100	30.65	5.3	17.22	18.55	6.71	1.71	19.73	2.34
500 - 699	100	28.69	4.8	17.55	18.02	7.75	1.71	21.38	1.53
700 - 899	100	24.24	3.6	17.71	21.33	8.74	1.75	22.49	1.32
900 -1099	100	22.56	4.5	15.76	21.19	10.49	2.62	22.76	1.03
1100 -1299	100	20.51	3.66	17.92	22.63	10.24	2.17	22.84	.7
1300 -1499	100	20.07	3.76	14.27	22.18	9.57	2.33	27.74	.6
1500 +	100	20.46	2.52	12.16	31.71	9.60	1.65	21.86	.38

*Own Account Food not included in Total for all Groups.

Source: C.S.O., Household Budgetary Survey Report 1975/76.

Appendix C 2: Table 5g:

Country	Population in thousands (1973 estimates)	MORTALITY		NUTRITIONAL STATUS						FOOD INTAKE					
		Infant mortality rate per 1000 live births	1-4 years mortality rate per 1000 in age group	Percentages of children under 5 years old in three grades of low weight according to Gomez scale			Percentages of children under 5 years old in three grades of anaemia			Per caput nutrient availability (from food balance sheet)		% of households not meeting requirements (from food consumption survey)		% of nutrient from imported foods (from food balance sheets)	
				1	2	3	Hb <8.0	Hb 8.0-9.9	Hb 10.0-10.9	Energy (Kcal)	Protein (gm)	Energy	Protein	Energy	Protein
Jamaica	1980	27	4.6	39	9	1.4				2945	74			46	62
Trinidad & Tobago	1060	28	2.1							2431	58	40	31	49	71
Guyana	760	45	5.8	44	17	1.4	1	9	31	2502	63	75	64	34	42
Barbados	241	34	1.3	39	11	1.2	8	15	32	2926	74	58	42	58	76
Bahamas	193	35	1.7												
Belize	132	34	4.1	40	18	1.2									
St. Lucia	114	52	4.1	33	9	1.9	0	8.6	5.7	2244	52	72	30	65	67
Grenada	97	16	1.4	44	10	0	← 38 →								
St. Vincent	92	70	6.2	47	14	1.5									
Antigua	74	19	0.4												
Dominica	74	45	5.9												
St. Kitts, Nevis	65	70	3.6												
Montserrat	13	31	2.9												
Cayman Islands	11	11	-												
Turks & Caicos Is.	6	47	-		<7	0.3									
Commonwealth Caribbean	4912	33	3.9	41	12	1.4				2713	67	56	44		
Northern America		18	0.8	16	0	0									
South America		60	4.2	-	-	-									

Notes: The Jamaican weights are for children under 48 months of age. The Belize Gomez classification is derived from a National sample of 5½ year olds. The Barbados anaemia rate is re-calculated from original data. The Grenada anaemia result refers to fifty 3-4 year olds from one village. The Commonwealth Caribbean figures are means weighted by the population of each country for which data are available.

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TABLE 5.1: Distribution of Average Monthly Expenditure on Selected Food Items by Monthly Income Groups: Trinidad & Tobago 1971/72

Expend. Class	All Incomes	Monthly Income Groups											
		0- 19	20- 49	50- 99	100- 199	200- 299	300- 499	500- 699	700- 899	900-1099	1100-1299	1300-1499	1500+
<u>Average Monthly Expenditure</u>													
All Foods		40.74	48.13	61.91	84.36	102.53	135.19	162.97	185.2	189.0	197.28	188.53	263.63
Cereals & Starchy Foods	21.10	10.55	12.44	15.09	19.88	21.81	27.11	29.11	30.75	28.41	32.29	26.37	32.58
Meat	10.90	3.67	3.61	5.52	6.82	9.62	14.69	19.47	23.70	32.08	24.81	25.78	41.35
Poultry	10.32	3.69	4.77	6.18	8.83	11.84	13.23	14.56	18.43	18.02	20.01	20.25	18.23
Fish	6.09	2.84	3.26	4.21	5.44	6.69	7.69	8.01	9.53	8.37	8.76	9.16	13.47
Dairy	15.69	5.96	7.25	9.22	12.99	15.84	20.11	27.64	29.03	29.81	32.86	31.30	41.8
Fats & Oils	8.91	3.02	3.41	4.11	5.63	5.91	8.02	8.88	8.22	7.40	7.88	6.35	6.98
Fruits	4.03	1.19	1.13	1.69	2.46	4.06	5.46	7.76	10.36	10.01	8.62	10.22	15.31
Vegetables	8.88	4.02	4.69	5.92	8.04	9.51	11.43	12.71	12.26	15.01	13.38	11.87	18.13
Sugar	3.84	1.61	2.12	2.60	3.57	3.97	4.83	5.74	6.28	5.13	5.93	6.29	7.22
Beverages	6.25	2.25	2.68	3.34	4.96	6.54	8.67	10.61	10.52	10.97	12.14	11.26	17.40
Other	10.30	1.94	2.77	4.03	6.44	10.8	13.95	18.48	26.12	23.87	20.60	19.68	51.13

Source: C.S.O., Household Budgetary Survey 1971/72

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TABLE 5i: Percentage Distribution of Expenditure on Selected Food Items by Monthly Income Groups
Trinidad & Tobago 1971/72

Expend. Class	All Incomes	<u>Monthly Income Groups</u>											
		0 - 19	20 - 49	50- -99	100- 199	200- 299	300- 499	500- 699	700- 899	900-1099	1100-1299	1300-1499	1500+
		<u>Average Monthly Expenditure</u>											
Cereals & Starchy Foods		25.8	25.8	24.3	23.8	21.2	20.0	17.8	16.6	15.0	16.2	13.9	12.9
Meat		9.0	7.5	8.9	8.0	9.3	10.8	11.9	12.7	16.9	17.6	18.9	15.6
Poultry		9.0	9.9	9.9	10.4	11.5	9.7	8.9	9.9	9.5	10.1	10.7	6.9
Fish		6.97	6.7	6.8	6.4	6.5	5.6	4.9	5.1	4.4	4.4	4.8	5.1
Dairy		14.6	15.1	14.8	14.5	15.4	14.8	16.9	15.6	15.7	16.6	16.6	15.8
Fats & Oils		7.41	7.1	6.6	6.6	5.7	5.9	5.4	4.4	3.9	3.9	3.3	.6
Fruits		2.9	2.3	2.7	2.9	3.9	4.0	4.7	5.5	5.2	4.3	5.4	5.8
Vegetables		9.8	9.7	9.5	9.5	9.2	8.4	7.7	6.6	7.9	6.7	6.2	6.8
Sugar		3.9	4.4	4.1	4.2	3.8	3.5	3.5	3.3	2.7	3.0	3.3	2.7
Beverages		5.5	5.5	5.3	5.8	6.3	6.4	6.5	5.6	5.8	6.1	5.9	6.6
Other		4.76	5.7	6.5	7.6	10.5	10.3	11.3	14.1	12.6	10.4	10.4	19.2

Source: C.S.O., Household Budgetary Survey 1971/72

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TABLE 6a : Balance of Visible Trade: Trinidad & Tobago
1951 - 1976 \$m. T.T.

<u>Year</u>	<u>Exports</u> (f.o.b.)	<u>Imports</u> (c.i.f.)	<u>Balance of</u> <u>visible Trade</u>
1951	117	154	-37
1952	120	173	-53
1953	153	171	-18
1954	163	184	-21
1955	179	222	-43
1956	289	301	-12
1957	328	355	-27
1958	369	412	-43
1959	370	447	-57
1960	437	502	-65
1961	554	584	-30
1962	560	606	-46
1963	595	644	-49
1964	693	732	-39
1965	708	813	-105
1966	751	777	-26
1967	758	729	+29
1968	948	854	+94
1969	991	964	+27
1970	1005	1082	-77
1971	1061	1310	-249
1972	489	811	-322
1973	653	797	-144
1974	1006	1084	+822
1975	2561	1608	+953
1976	3023	2101	+922
Total 1951-61	3099	3505	-405
Total 1962-74	11118	11203	- 85
Total 1951-74	14217	14708	-491
Total 1974-76	7490	4792	+2699
Total 1951-76	19801	18416	+1385

Source: C.S.O., Overseas Trade Reports and
Unpublished data.

APPENDIX C 2TABLE 6b: Exports and Imports of Firms
Enjoying Concessions: \$ m. TT.:

Year	Export of Commodities Under Concessions (f.o.b.)	Total Exports	Imports by "Concession" Prices	Total Imports
1957	n.a.	328	n.a.	355
1958	9.5 (2.3)	412.8	16.9 (4.1)	412.5
1959	10.3 (2.4)	434.9	17.9 (4.0)	448.6
1960	16.1 (3.4)	476.4	10.9 (3.7)	504.6
1961	15.2 (2.6)	579.5	21.0 (3.6)	584.6
1962	18.5 (3.2)	579.7	28.3 (4.7)	606.4
1963	16.9 (2.8)	621.7	57.6 (8.9)	647.2
TOTAL (excl. 1957)	86.5 (2.8)	3108.0	160.6 (5.0)	3203.9

(Bracketed numbers represent shares in total exports and total imports)

Source: Fitz Francis, "A review and Analysis of the System of Incentives for Industrial Development in Trinidad and Tobago" (1968), pg. 105.

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TABLE 6c: Selected Non-oil Imports into Trinidad & Tobago
1966 - 1972. \$m. US.

<u>Item</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>Annual Growth Rate 66 - 72</u>
Food & Related Items	48.8	45.9	41.2	51.9	47.4	53.4	55.1	<u>1.9%</u>
Consumer Durables	40.8	34.1	31.2	39.9	46.5	39.5	67.9	<u>10.2%</u>
Total Consumer Goods	119.1	109.3	95.9	124.2	128.3	153.1	166.8	<u>6.6</u>
Raw Materials	38.4	37.6	36.7	41.3	47.1	45.5	59.3	<u>8.07</u>
Other Materials, Machinery & Equipment (Capital Goods)	75.5	68.7	66.4	69.8	75.5	124.1	127.2	<u>11.2</u>

Sources: C.S.O., Overseas Trade Reports
 (Various Issues)

C.S.O., Quarterly Economic Reports
 (Various Issues)

TABLE 6d : Distribution of Enterprises by Raw Material Imports 1962

<u>Proportion of Raw Material Imported %</u>	<u>Local Firms</u>	<u>Foreign Firms</u>
0 - 5	2	2
5 - 15	2	0
15 - 30	0	0
30 - 50	1	0
50 - 70	1	0
70 - 85	6	4
85 - 95	0	1
95 -100	8	5
Variable	1	0

Reproduced from F. Francis Op. cit. pg. 93

TABLE 6e : Import Content by Industry, 1962

<u>Industry</u>	<u>Direct Import Requirement per Unit of output, %</u>	<u>Direct & Indirect Requirement per Unit of Final Demand, %</u>
Oil Refining & Manufacturing	52.5	56.1
Oil Mining	8.9	10.4
Textiles & Footwear	28.4	30.5
Alcoholic Beverages & Tobacco	25.2	28.3
Food Manufacturing	19.1	25.0
Other Manufacturing	20.0	24.5
Transport etc.	2.5	13.8
Distribution	8.4	12.3
Services	11.7	16.0
Construction	17.6	25.3
Public Utilities	29.4	33.5
Sugar Manufacturing	6.7	11.1
Sugar Growing	2.3	5.3
Food Crops	1.6	2.3
Other Tree Crops	5.6	6.8
Livestock and Poultry	10.1	14.3
Fishing	2.0	7.5
Forestry	0.0	0.7
Mining & Quarrying	3.3	3.3
Banks, etc.	4.0	4.7
Rent of Dwellings	0.0	5.9

Source: A.A. Francis; A Note on Inter-Industry Relations in the Economy of Trinidad and Tobago, 1962. C.S.O. Research Papers, p. 72

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TABLE 6f : Direction of Foreign Trade 1962 - 77: % Exports and Imports

Year	United Kingdom		Commonwealth Caribbean (Later Carifta)		U.S.A.		CANADA		LAFTA		REST OF THE WORLD	
	(f.o.b.) Exports	(c.i.f.) Imports	(f.o.b.) Exports	(c.i.f.) Imports	(f.o.b.) Exports	(q.i.f.) Imports	(f.o.b.) Exports	(c.i.f.) Imports	(f.o.b.) Exports	(c.i.f.) Imports	(f.o.b.) Exports	(c.i.f.) Imports
1962	26	22	5	2	27	13	6	5	n.a.	19	36	30
1963	25	20	4	1	29	16	5	5	n.a.	19	37	39
1964	23	18	3	1	30	14	6	5	n.a.	22	38	40
1965	18	17	3	1	34	17	5	5	n.a.	26	40	34
1966	14	17	3	1	36	14	4	6	n.a.	30	43	33
1967	13	15	3	1	41	15	5	5	n.a.	40	38	24
1968	10	15	7	2	42	15	4	4	3	46	24	18
1969	10	14	10	2	43	16	2	4	3	-	32	-
1970	10	13	10	2	46	16	1	4	4	26	29	39
1971	9	13	11	2	45	18	2	4	4	-	29	-
1972	8	13	12	3	42	19	3	4	3	9	32	52
1973	5	15	12	3	50	16	4	4	2	14	27	46
1974	2.4	5.7	8.7	1.7	64.4	11.0	2.5	2.2	3.1	8.5	3.1	67.1
1975	4.0	8.0	9.3	2.8	69.7	21.7	1.2	2.7	1.5	1.8	2.6	54.3
1976	4.8	7.5	8.0	2.7	68.8	19.4	.8	2.5	3.7	3.3	1.9	58.6
1977	2.0	10.5	7.5	3.2	74.0	20.8	1.1	3.5	2.5	2.8	2.1	52.0

Sources: Government of Trinidad and Tobago, Draft Third Five Year Development Plan.
 C.S.O., Overseas Trade Reports (Various Issues)
 Government of Trinidad and Tobago: Review of the Economy 1978.
 C.S.O., Unpublished Data.

Notes: (a) ... means less than 1%. (b) ... no figure obtained.

APPENDIX C 2Table 6g: Trinidad and Tobago Trade with CARICOM 1972 and 1976

	<u>Exports \$m. T.T.¹</u>		<u>Year</u>			<u>Exports Percentage</u>		<u>Year</u>	
			1972	1976				1972	1976
1. Domestic Manufactured Exports to CARICOM			73.9	92.2	1. Exports to CARICOM as a % of Total Exports. %			11	7
2. Total Domestic Manufactured Exports			175.3	232.1	2. Manufactured Exports as a % of Total Exports. %			12	4
3. Total Domestic Exports to CARICOM			173.3	381.4	3. Manufactured Exports to CARICOM as a % of Total Manufactured Exports. %			42	42
4. Total Domestic Exports			1528.8	5331.6	4. Manufactured Exports to CARICOM as a % of Total Exports. %			5	2
5. <u>Imports \$m. T.T.</u> Manufactured Imports from CARICOM			24.6	75.1	5. Manufactured Exports to CARICOM as a % of Total Exports to CARICOM. %			43	25
6. Total Domestic Manufactured Imports			849.8	1494.5	6. <u>Imports Percentage</u> Manufactured Imports from CARICOM as a % of Total Imports from CARICOM. %			42	57
7. Total Imports from CARICOM			58.8	103.8	7. Manufactured Imports as a % of Total Imports. %			12	4
8. Total Domestic Imports			2108.4	4826.9	8. Manufactured Imports from CARICOM as % of Total Imports. %			1	1.5
					9. Manufactured Imports from CARICOM as % of Total Manufactured Imports. %			3	5
					10. Total Imports from CARICOM as a % of Total Imports. %			3	3

¹ Figures for 1972 and 1976 were taken from an International Source and converted from \$US. to \$TT. at \$2.80TT. = \$1.00US. for 1972 and \$2.40TT. = \$1.00US. for 1976.

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TABLE 6h: Trinidad and Tobago: Trade with CARICOM \$m T.T.

	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>Years</u>		<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>Growth Rate (66 - 72)</u>	<u>Growth Rate (72 - 77)</u>
						<u>1971</u>	<u>1972</u>							
1. Exports (f.o.b.)	55	54	58	77	93	83	90	110	232	237	288	264	19% p.a.	30% p.a.
2. Petroleum as % of 1	-	-	-	-	34.1	36.3	32.0	38.6	54.9	42	51	58	-	-
3. Imports (c.i.f.)	18	18	15	22	26	25	40	38	60	91	125	130	17% p.a.	29% p.a.

Sources: C.S.O., Annual Statistical Digest (1971/72)

Government of Trinidad & Tobago; Review of the Economy (Various Issues)

APPENDIX C 2TABLE 7a: Total Advertising Expenditure - 1974

<u>Media</u>	<u>Total Billing</u>		<u>Agency</u>		<u>Direct</u>	
	\$'000	%	\$'000	%	\$'000	%
Main Press	6,233	26	3,821	61	2,402	39
Radio	5,432	23	3,422	63	2,010	37
Television	4,957	21	3,965	80	991	20
Cinema	415	2	373	90	42	10
Other*	6,553	27	4,325	66	2,228	34
Outdoor	153	1	153	100	-	-
TOTAL	23,733	100	16,059	68	7,673	32

Source: Draper, Table 5. *Printing and Production Costs account for 57% of this.

TABLE 7b: Distribution of Media Billing by Product Class

<u>Product Class</u>	<u>Press A</u>	<u>Press B</u>	<u>Press C</u>	<u>Radio 1</u>	<u>Radio 2</u>	<u>Cinema</u>
Food Products	20	20	20	10	20	17
Household Durables	15	8	40	20	20	4
Textiles, Clothing, Footwear	15	25	-	20	15	7
Tobacco Products	3	1	-	5	5	7
Cosmetic, Toiletries	10	3	5	10	-	7
Beverages: Alcoholic	15	5	20	9	10	13
Non-Alcoholic	3	5	10	20	10	18
Motor Cars, Bicycles, Etc..	10	1	5	1	-	-
Fuel - Cooking & Transport	3	1	-	5	-	1
Other	6	31*	-	-	20	26

Source: Draper, Table 6 *A sizeable part may be classified ads.

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Table 8a: Direct Foreign Investment: Importance of Inflows
and Outflows %

<u>Year</u>	<u>D.F.I. as % of Net</u> <u>Do. Cap. Formation</u>	<u>D.F.I. as % of</u> <u>Business Investment</u>
	(1)	(2)
1956	67.4	82.7
1957	81.2	93.5
1958	48.7	59.9
1959	61.7	75.1
1960	46.2	54.6
1961	40.5	50.7
1962	39.5	53.7
1963	70.3	99.1
1964	40.6	54.7
1965	68.0	80.9
1966	32.7	40.1
1967	-	-

Sources: A. McIntyre and B. Watson. Studies in Foreign Investment in the Commonwealth Caribbean. No. 1 Trinidad & Tobago. Jamaica 1970.

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TABLE 8b: Net Investment Income on Direct Investment
as a Percentage (%) of Export Earnings

<u>Year</u>	(1) <u>Net Investment Income</u>	(2) <u>Direct Investment Income</u>	(3) <u>1 as % of Export Earnings</u>	(4) <u>2 as % of Export Earnings</u>
1951	30.1	31.9	25.7	27.2
1952	24.6	26.4	20.5	22
1953	35.8	38.2	23.3	24.9
1954	31.2	34.5	19.1	21.1
1955	38.8	40.6	21.6	22.6
1956	72.6	74.5	25.1	25.7
1957	112.6	115.4	34.3	35.1
1958	94.5	96.5	25.6	26.1
1959	122.5	126.0	33.1	34.0
1960	94.2	98.1	21.5	22.4
1961	120.4	126.0	21.7	22.7
1962	118.4	123.0	21.1	21.9
1963	117.9	121.3	19.8	20.3
1964	124.2	125.2	17.9	18.0
1965	96.3	101.6	13.6	14.3
1966*	106.2	109.7	14.2	14.6
1967	148.1	152.8	19.5	20.1
1968	151.5	153.4	15.9	16.0
1969	177.8	181.8	17.8	18.3
1970	160.0	162.6	15.9	16.1
1971	154.	150.7	14.5	14.2
1972	158.5	153.5	15.7	15.6
1973	193.2	168	14.7	13.
1974	246.2	235.7	12.9	12.4
<u>Average Annual Growth Rate:</u>				
51-61	19.9	19.4		
51-66	11.9	13.8		
62-72	4.07	3.2		
67-73	5.08	2.5		

Source: **Computed**

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TABLE 8c : Debt as Percentage of G.D.P., Exports, and Revenue
Trinidad & Tobago 1967 - 1973

	<u>YEAR</u>						
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>
1. Net Total Debt \$m. TT.	243.2	282.4	308.8	327.0	392.2	463.3	524.4
2. Net External Debt \$m. TT	103.7	120.3	125.6	114.7	144.1	179.6	235.5
3. Net Domestic Debt \$m. TT	139.5	162.1	183.2	212.3	248.1	285.4	306.9
4. (1) As % of GDP %	18.0	18.5	19.7	20.1	21.7	22.7	22.0
5. (2) As % of GDP %	7.7	7.9	8.0	7.0	8.0	8.8	9.5
6. (3) As % of GDP %	10.4	10.6	11.7	13.0	13.7	14.0	12.4
7. (2) As % of Adjusted Exports %	22.0	24.5	25.2	24.0	26.8	30.7	33.9
8. (2) As % of Export Earnings %	13.6	12.6	12.6	11.4	13.5	12.2	12.0
9. (1) As % of Current Revenues %	107.2	107.9	103.4	102.9	113.4	104.9	99.7
10. (2) As % of Current Revenues %	45.7	46.0	42.0	36.1	41.6	40.6	43.3
11. (3) As % of Current Revenues %	61.5	62.0	61.3	66.8	71.7	64.6	56.4

Source: Computed

APPENDIX C 2TABLE 8d: The Public Debt Trinidad & Tobago 1953 - 1975

<u>Year</u>	<u>\$m. T.T.</u>						
	<u>(1)</u> <u>Internal</u> <u>Debt</u>	<u>(2)</u> <u>External</u> <u>Debt</u>	<u>(3)</u> <u>Gross</u> <u>Debt</u>	<u>(4)</u> <u>Net</u> <u>Debt</u>	<u>(5)</u> <u>2 as %</u> <u>of 3</u>	<u>(6)</u> <u>Net External</u> <u>Debt as a %</u> <u>of Net Debt</u>	<u>(7)</u> <u>Gross Debt</u> <u>as a % of</u> <u>G.D.P.</u>
1953	13.1	40.2	53.3	46.2	75.4	72.2	13.7
1954	12.8	60.6	73.4	64.6	82.5	80.6	17.8
1955	12.5	60.6	73.1	62.8	82.9	81.5	15.3
1956	12.4	60.6	73.0	61.2	82.9	80.3	13.1
1957	12.3	60.6	72.9	59.1	83.1	80.2	10.4
1958	12.3	60.6	72.9	55.8	83.1	79.5	10.1
1959	24.6	60.6	85.2	65.4	71.1	66.8	10.6
1960	37.3	60.6	97.9	77.1	61.8	56.2	11.3
1961	47.3	60.6	107.9	82.1	56.1	50.7	11.3
1962	72.3	72.7	145.0	113.7	50.1	44.2	14.4
1963	76.9	115.3	192.1	157.1	60.	56.2	17.5
1964	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1965	105.9	126.7	232.6	184.4	54.4	51.1	19.5
1966	129.8	136.3	266.1	212.6	51.2	47.5	21.3
1967	154.8	143.4	298.2	239.1	48.1	43.9*	22.3
1968	181.6	157.1	338.7	275.3	46.3	43.0*	22.3
1969	202.6	167.7	370.3	297.3	45.2	46.9	23.7
1970	234.4	158.2	392.6	314.6	40.2	34.2*	24.1
1971	275.9	162.1	438.8	377.0	37.0	36.0	24.3
1972	333.9	199.2	533.1	463.3	37.3	37.4	26.2
1973	370.2	255.7	625.9	548.4	40.8	41.7	25.3
1974	387	241.4	628.7	538.8	38.3	39.8	16.5
1975	420.1	235.5	643.6	532.4	36.5	36.5%	12.9

Source: Computed

APPENDIX C2TABLE 6e: Trinidad & Tobago Debt Service 1967 - 72

	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>
1. Total Debt Service	22.9	31.6	36.1	39.8	43.9	49.4
2. External Debt Service	13.8	17.4	19.3	19.7	21.2	18.9
3. Domestic Debt Service	9.1	14.2	16.8	28.1	22.7	30.5
4. (1) As % of Current Revenues	10.2	12.1	12.1	12.5	12.5	11.0
5. (2) As % of Current Revenues	5.6	6.6	6.4	6.0	5.8	4.5
6. (3) As % of Current Revenues	4.0	5.4	5.6	6.3	6.6	6.9
7. (2) As % of Export Earnings	1.8	1.8	2.0	2.0	2.0	1.7

Sources: C.S.O., Overseas Trade (Various Issues)

Computed

APPENDIX C2

TABLE 8f : Selected Countries Per Capita Gross National
Product and Domestic Public Debt as
Percent of Gross Domestic Product

<u>Countries</u>	<u>Debt: As a % of G.D.P.</u>	<u>Per Capita G.D.P. (Rank)</u>
	<u>%</u>	<u>\$US.</u>
1. United Kingdom	78.8	1620 (6)
2. Ceylon	52	150 (14)
3. New Zealand	49.5	1930 (3)
4. Canada	47.5	2240 (2)
5. Rhodesia	43.6	210 (12)
6. United States	41.2	3520 (1)
7. Australia	40	1840 (4)
8. India	32.1	90 (15)
9. Ghana	27.2	230 (11)
10. France	15.7	1730 (5)
11. Jamaica	11.3	460 (10)
12. Mexico	9.5	470 (9)
13. Trinidad and Tobago	9.0	630 (8)
14. Zambia	7.8	180 (13)
15. Japan	7.1	860 (7)

Source: Finance Development Quarterly No. 2 1970.

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TABLE 8g: Service Payments on External Public Debt
as Percentage of Exports of Goods and Services:
Western Hemisphere 1969¹

<u>Country</u>	<u>Percentage</u>
1. Argentina	23.9
2. Mexico	22.9
3. Uruguay	18.8
4. Brazil	17.9
5. Chile	15.9
6. Peru	13.8
7. Columbia	11.2
8. Costa Rica	10.5
9. Ecuador	10.4
10. Nicaragua	9.1
11. Paraguay	8.8
12. Dominican Republic	8.7
13. Guatemala	8.7
14. Bolivia	5.6
15. Guyana	3.5
16. El Salvador	3.2
17. Jamaica	3.1
18. Panama	2.5
19. Honduras	2.3
20.* Trinidad and Tobago	2.1*
21. Venezuela	2.0

Source: IBRD

¹ Trinidad & Tobago ranks 70th out of 75 countries in a Sample exclusive of "Developed Countries".

APPENDIX C2

TABLE 8h: Disbursement from Unemployment Fund
(\$M)

	Receipts	Management Group Schools etc.	Housing	National Youth Service and Handi- craft	Educa- tional	Labour Inten- sive Pro- jects	Urban Re- develop- ment Pro- gramme	Employ- ment of 'O' Level Grad- uates	Total	Unspent Balance	9 as % of 1
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1970	9.6	-	-	-	0.6	5.8	-	-	6.4	3.2	67
1971	11.8	-	1.0	-	0.2	5.2	-	-	6.4	5.4	51
1972	12.3	-	1.0	-	0.2	3.9	-	-	5.1	7.2	59
1973	14.6	-	4.1	-	0.1	3.0	-	-	7.2	7.4	51
1974	77.9	-	6.2	0.9	0.2	2.6	1.9	-	11.8	66.1	15
1975	104.9	-	7.3	4.2	0.2	3.9	1.7	-	17.3	87.6	16
1976	119.7	7.6	19.8	7.0	0.3	13.9	2.2	0.2	51.0	68.7	43
1977	174.0	32.9	14.0	5.6	0.3	26.8	1.6	1.9	68.8	105.2	40
1978	187.1	32.9	7.2	4.6	1.3	34.3	7.3	5.8	93.4	93.7	50
TOTAL	711.9	59.1	60.6	22.3	3.4	99.4	14.7	7.9	267.4	445.	

Source: Review of Fiscal Measures in the 1978 Budget p. 15.

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TABLE 81 : Government Finances - Trinidad & Tobago 1951 - 1977

<u>Year</u>	<u>\$m. T.T.</u>									
	(1) <u>Current Revenue</u>	(2) <u>Current Expenditure</u>	(3) <u>Current Surplus</u>	(4) <u>Overall Deficit</u>	(5) <u>Net Foreign Borrowing</u>	(6) <u>Net Local Borrowing</u>	(7) <u>Net Total Borrowing</u>	(8) <u>3 as % of 1</u>	1 ⁽⁹⁾ <u>as % of G.D.P. at Factor Cost</u>	2 ⁽¹⁰⁾ <u>as % of G.D.P. at Factor Cost</u>
1951	58.0	46.7	11.3	-0.2	6.0	-5.6	0.4	19.4	18.8	15.1
1952	66.1	54	12.1	+4.0	-3.9	+0.5	-3.4	18.3	19.2	15.7
1953	68.1	60	7.1	-2.8	-3.0	+1.5	-1.5	10.5	17.6	15.5
1954	73.6	67.6	6.0	-7.0	+1.5	+1.4	+2.9	8.1	17.9	16.4
1955	81.9	69.7	12.2	-10.4	+12.0	-0.6	+11.4	14.8	17.2	14.6
1956	88.5	75.5	13.0	-7.5	+9.3	-	+9.3	14.6	15.9	13.5
1957	101.6	81.4	20.2	+1.7	+7.5	-6.6	+0.9	19.8	14.6	11.7
1958	130.0	95.1	34.9	+4.9	-20.8	+9.3	-11.5	26.8	18.1	13.3
1959	135.8	104.7	31.1	-4.4	+8.2	-8.9	-0.7	22.9	17.0	13.1
1960	148.8	117.5	31.3	-18.4	+5.9	+15.4	+21.3	21.0	17.1	13.5
1961	145.5	140.7	4.8	-46.7	+2.1	+40.1	+42.2	3.2	15.2	14.7
1962	173.6	156.2	17.4	-30.6	+12.2	+25.4	+37.6	10.0	17.2	15.5
1963	148.8	166.5	18.3	-36.0	+39.2	+3.2	+42.4	9.9	13.5	14.3
1964	203.8	186.5	17.3	-33.2	+9.0	+24.9	+33.9	8.4	17.7	15.3
1965	206.2	189.8	16.4	- 9.0	+3.5	+14.5	+18.0	7.9	17.3	15.9
1966	214.3	206.6	7.0	-31.0	+9.0	+15.0	+24.0	3.2	17.2	16.3
1967	226.8	213.3	11.8	-8.5	+7.8	+3.3	+11.1	5.2	16.9	15.9
1968	261.3	227.4	33.9	-16.3	+15.5	-3.9	+11.6	12.9	17.1	14.9
1969	298.6	254.7	43.9	- 0.5	+ 8.5	-8.9	+0.4	14.7	19.1	16.3
1970	317.7	285.2	32.5	-49.8	-1.4	+51.1	+49.7	10.2	19.5	17.5
1971	354.7	348.2	-2.5	-89.0	+25.3	+63.6	+88.9	.7	19..	19.3
1972	441.6	423	18.6	-94.9	+37.4	+57.5	+94.9	4.2	21.7	20.7

Cont'd

TABLE 81 : Government Finances - Trinidad & Tobago 1951 - 1977

<u>Year</u>	<u>\$m. T.T.</u>									
	<u>Current Revenue</u> (1)	<u>Current Expenditure</u> (2)	<u>Current Surplus</u> (3)	<u>Overall Deficit</u> (4)	<u>Net Foreign Borrowing</u> (5)	<u>Net Local Borrowing</u> (6)	<u>Net Total Borrowing</u> (7)	<u>3 as % of 1</u> (8)	<u>1 as % of G.D.P. at Factor Cost</u> (9)	<u>2 as % of G.D.P. at Factor Cost</u> (10)
1973	543.6	477.8	65.8	-19.6	+49.0	-29.4	+19.6	12.1	22.0	19.3
1974	1438.6	758.8	679.8	+479.7	-16.8	-462.9	-479.7	47.2	37.8	19.9
1975	1912.4	1280.5	631.9	+724.2	-22.1	-702.1	-724.2	33.0	35.9	24.1
1976	2369.4	1040.6	1328.8	+510.0	-77.3	-432.7	-510.0	56.0	37.7	16.6
1977	2958.4		1523.7	+614.5	-	-	-	16.7	-	-
<u>TOTAL</u>										
1951-61	1096.9	912.9	184					16.7	16.8	14.0
1962-72	2870.9	2654.4	214.6					7.4	18.4	17.0
1951-72	3967.8	3567.3	398.6					10.0	17.9	16.1
<u>Average Annual Growth Rate:</u>										
1951-61	9.9	11.7	9.3							
1962-72	10.5	10.6	17.0							
1951-72	10.2	11.1	13.0							

Source: Computed

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TABLE 8j: Import Duty Collections Trinidad & Tobago
\$m. T.T.

	<u>Year</u>										Average Annual Growth Rate <u>67 - 73</u> %
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	
Adjusted Imports	373.5	397.2	471.8	558.0	701.8	812.2	979.2	1084.4	1607.7	2090.9	13.7
1. Imports Exempt from Duty under Incentive Laws	72.8	95.7	130.2	170.0	235.1	412.3	388.6	498.6	654.4	-	34.2
2. Imports Exempt from Duty under Tariff or other Legislation	97.9	103.5	97.3	131.3	124.2	55.7	76.0	199.0	297.8	-	3.2
3. <u>Total Imports Exempted</u>	170.7	199.2	227.5	301.3	359.3	468.	464.4	497.6	952.2	-	18.75
4. Dutiable Imports	202.8	198.0	244.3	256.7	342.5	345.2	332.6	386.8	655.5	-	9.4
5. Customs Duties Collected	45.1	45.2	49.4	55.8	64.0	71.4	68.0	75.7	104.7	151.3	7.2
6. <u>Customs Duties Forgone</u>	15.8*	-	32.8	39.6	62.2	73.6	66.9	63.6	99.3	182.8	28.1
7. Effective Rate of Duty on Dutiable Imports %	22.2	22.8	20.2	21.8	28.7	20.7	20.4	19.6	15.6	-	-
8. Effective Rate of Duty Lost on Imports Exempted %											
9. Effective Rate of Duty on Total Imports %	12.1	11.4	10.5	10.0	9.1	8.8	8.5	7.0	6.5	7.2	
10. Dutiable Imports as % of Total Adjusted Imports %	54.3	49.8	51.8	46.0	48.8	42.4	41.7	35.7	40.8	-	

*Estimate from A. McIntyre and B. Watson: Studies in Foreign Investment in
the Caribbean.

APPENDIX C 2TABLE 8k : External Funding of Projects 1969 - 78

<u>Year</u>	<u>Institutional</u>				<u>Foreign Market</u>	<u>Total</u>
	<u>World Bank</u>	<u>IDB</u>	<u>CIDA</u>	<u>Ex./Imp. Bank</u>		
	(1)	(2)	(3)	(4)	(5)	(6)
1969	4.4	0.1	0.8	1.7	6.7	13.7
1970	6.6	-	1.0	0.1	-	7.7
1971	12.5	4.4	1.6	-	20.2	38.7
1972	8.1	1.9	-	-	34.5	44.5
1973	6.2	0.5	7.8	-	51.4	65.9
1974	5.6	8.3	1.1	-	32.3	47.3
1975	3.3	4.2	3.4	-	-	10.9
1976	3.9	3.0	2.6	-	-	9.5
1977	5.7	9.2	5.7	-	-	20.6
1978 ^{RE}	3.5	3.6	0.6	-	-	7.7

^{RE} Revised Expenditure

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TABLE: 9a: Contractual Wage Settlements Since 1967: Random Sectors, Trinidad & Tobago

	<u>Percentage Wage Increase</u>											
	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	
Typical Contract	12	18	25-30	30-80	30-80	30-80	30-80	30-80	30-80	30-80	30-80	-
<u>Private Sector</u>												
Petroleum	-	18 ^a	-	20 ^b	-	-	37	44	-	57 ^c	-	-
Manufacturing	-	-	-	25 ^d	33	27	38	46	-	-	-	-
Construction	-	-	-	-	-	20	30	26	-	-	-	-
Distribtuion	-	-	-	-	26	25	40	37	-	-	-	-
Wireless and Printing	-	-	-	-	-	26	48	33	-	-	-	-
Aviation Industry	-	-	-	-	-	-	-	29	-	-	-	-
Maritime Industry	-	-	-	-	24	-	28	35	-	-	-	-
Port Authority	-	-	-	35	-	-	-	-	-	-	-	-
Estate Agriculture (excluding sugar)	-	-	-	-	17	24	38	37	-	-	-	-
Sugar	-	-	-	-	-	22	-	-	100 ^e	-	-	-
<u>Public Sector</u>												
Electricity Co. (T.&T.E.C.)	-	-	-	29	-	-	27	-	-	-	-	-
Telecommunications Co.	-	-	-	-	-	30	-	-	-	-	-	-
Civil Service (Monthly Paid)	-	-	-	-	28	-	-	45 ^f	-	-	-	53
Government Daily Workers	-	-	-	-	-	25	-	-	-	-	-	53

(a) Wage Settlement made between 700 OWTU workers and W.R. Grace (Federation Chemicals)

(b) Wage Settlement made with Oil Service Companies.

(c) Wage Settlement between OWTU workers and TEXACO; TRINTOC (Shell); W.R. Grace.

(d) Settlements in the Garment Industry.

(e) Settlement between ATSEFWU and Caroni Ltd.

(f) The Settlement within the Postal Service was at the same level.

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TABLE 9b: Wages and Salaries in Current Account Expenditure of Central Government

<u>Year</u>	<u>Emoluments</u>	<u>Wages and Overtime on other Supplies and Services *</u>	<u>Subventions to Local Authorities and other bodies **</u>	<u>Goods and Services</u>	<u>Total Public Debt Charges</u>	<u>Other extra-ordinary Current Expenditure</u>	<u>Total</u>	<u>1+2+3</u>	<u>8 as a % of 7</u>	<u>1 as a % of 8</u>	<u>2 as a % of 8</u>	<u>3 as a % of 8</u>
1969	120.6	20.1	30	45	20	4.9	235.7	170.7	72.4	70.7	11.7	17.5
1970	133.1	21.9	33.9	50.3	21.6	5.1	265.9	188.9	71.4	70.	11.5	17.9
1971	176.7	23.2	38.9	65.1	23.8	7.5	335.2	238.8	71.2	73.9	9.7	16.2
1972	217.1	24.4	43.9	62.9	27.8	28.5	404.6	285.4	70.5	76.0	8.5	15.3
1973	237.4	25.7	54.3	116.2	34.9	4.7	473.2	317.4	67	74.7	8.0	17.1
1974	336.0	39.6	60.8	134.8	51.4	11.3	633.9	436.4	68.8	77	9.0	13.9
1975	369.7	47.4	90.6	165.1	47.0	45.2	765	507.7	66.3	72.7	9.3	17.8
1976	443.3	70.5	132.0	245.9	41.7	14.8	948.2	645.8	68.1	88.6	10.9	20.4
1977	579.8	72.2	141.6	251.8	44.7	19.6	982.7	793.6	67.8	73.1	9.1	17.8
1978	728.0	85.6	172.4	480.1	84.1	36.5	1586.7	986.	62.1	73	8.6	17.4

*2 Excludes expenditure on Development Programmes

**Assumed to be chiefly spent on Wages

Source: Trinidad & Tobago Review of Fiscal Measures in the 1978 Budget.

APPENDIX C 2TABLE 10a: Net International Reserves of Trinidad & Tobago

YEAR	Reserves of Banking System (1)	Total Government Reserves (2)	1950-76		
			Total Net Reserves (3)	Total Net reserves in months of Imports (4)	Total Net reserves in weeks of Imports (5)
1950	75.4	26.2	101.6		-
1951	81.5	32.2	113.7	8.8	38.1
1952	84.	36.1	120.1	8.3	35.9
1953	90	39.1	129.1	9.1	39.4
1954	104.4	58.0	162.4	10.5	45.4
1955	100.7	46.0	146.7	7.9	34.2
1956	112.6	36.7	149.3	5.9	25.5
1957	156.3	29.2	185.5	6.2	26.8
1958	149.1	50.0	199.1	5.8	25.1
1959	159.3	41.8	201.1	5.3	22.9
1960	134.7	35.9	170.6	4.1	17.7
1961	115.5	33.8	149.3	3.1	13.4
1962	94.4	32.4	126.8	2.4	10.3
1963	121.6	39.1	160.7	2.8	12.1
1964	80.2	40.9	121.1	1.9	8.2
1965	77.6	42.0	119.6	1.7	7.3
1966	65.2	36.9	102.1	1.6	6.9
1967	72.4	13.2	95.6	1.6	6.9
1968	110.2	29.6	139.8	1.9	8.2
1969	103.4	24.4	127.8	1.6	6.9
1970	94.4	18.	112.4	2.5	10.8
1971	138.8	21.8	160.6	2.8	12.1
1972	89.8	18.	107.8	1.6	6.9
1973	71.2	13.8	85	1.4	6.1
1974	600.6	13.6	614.2	7.7	33.3
1975	1737.5	13.9	1751.4	12.	51.9
1976	2428.7	19.9	2448.6	14.3	61.9

Source: Computed

D. THE FUTURE OF THE TRINIDAD AND TOBAGO ECONOMY1. Modification or Transformation? The Debate Part Two

Will elevated export earnings be used for expansion and deepening of the staple economy? Or will they be devoted to transformation? Since 1974, this question has rekindled the oldest debate in the West India and Caribee sugar colonies. As early as 1968, the fundamental unviability of the post-war industrialization had forced the territories towards the Caribbean Free Trade Area. Then the fiscal crisis combined with the upsurge of social conflict in the early 1970's to prod Trinidad and Tobago towards three new measures of adjustment.

The first measure acknowledged the employment-destroying record of recent economic activity. The result was to be an expanded programme of Special Works employment to be funded by a special tax - The Unemployment Levy. (Table 8h*) The second measure acknowledged the disruptive effect of development on enterprise, on management and on own-account activity, with special reference to industry and to small agriculture. A reorganisation was to follow of the Small Business Division of the Industrial Development Corporation, of the Central (Agricultural) Marketing Agency and the Agricultural Development Bank. With co-operative distribution at the retail level being also treated to an injection of capital, "A People's Sector" in some sense could be said to be taking shape. Finally, the State now determined to control the large transnational corporations by means of its own direct participation in ownership and, if possible, in day-to-day control.

By 1973 the industrialization strategy came to embrace a Caribbean Community with its promise of industrial programming and resource combination on a regional scale. The limitations of island-based manufacturing pointed not only to the larger market but to an abandonment of the policy which had offered over-generous incentives, and yet failed to impose any specifications regarding research and development, or the use of home materials or the care of the environment even, and which had even neglected to guide export and employment performance. The new regime therefore sought not only to add the common external tariff to regional free trade, but also to deepen the industrialization process.¹ The harmonisation of incentives attempted to introduce a more discriminating and less costly scheme under which the criterion for CARICOM treatment and local-value-added, is computed on the basis of improved origin-rules.

Since 1974, these approaches to reform have accelerated into a virtual leap what with the momentum given to Trinidad and Tobago by the oil bonanza. The first positive steps in 1970 had been the acquisition of a majority equity in the main sugar company and the localisation of a commercial bank. By 1972, a White Paper on public participation in economic life could designate the sector as the "prime mover" in new areas of production and job-creation. Between 1968 and 1972, spending on acquisition had reached \$50m. and a long road had been covered since the forced take-over of an ailing British Petroleum Company in 1968. Soon a much longer journey would be travelled in a much shorter time.

* Appendix C.

Between 1974 and 1978, \$226.2m. were devoted to acquisition bringing the total since 1972 to \$247.4m., a rate of growth of expenditure of 55% per annum. Total initial value of State holdings amount now to \$364.5m., the lion's share in enterprises completely owned. (Table 1)

A new ethos of economic control, it seems, has been emerging. The sudden escalation of petroleum revenues has come up against a marked inadequacy of absorptive capacity leading to an immense build-up of surplus resources under the fabric of Special Funds (Table 2). Nevertheless, spending has more than matched the increase in national income with consumption-oriented welfare expenditure conservatively estimated - increasing its share of recurrent expenditures from 7.5% in 1973 to 14.4% in 1977. At the same time, capital expenditure has grown by 72.5% per annum, the share of it going to loans and transfers to executive agencies other than the central government zooming by a fraction short of 100%, faster even than the rate for acquisitions. (Table 3).

In short, the economy now revolves not around the multi-national corporations but around the State which earns the huge bulk of the petroleum income and which, in 1977, spent no less than 31% of the G.D.P. at market prices. When account is taken of the fact that public ownership is rapidly expanding its incremental share of the equity in the leading sector, what with joint ventures being the accepted formula of business organization there, the economy in principle has now definitively embarked upon nationalisation. The crucial question, however, remains essentially unanswered and that is whether or not the economy has finally escaped the clutches of staple domination?

From the beginning the central Caribbean concern has been with staple domination. The dynamic processes of resource mobilisation, technological innovation and taste creation have served only to carry the economy progressively further away from self-reliance, towards larger gaps in resource availabilities and therefore more towards external dependence. The debate about the drift in public policy must focus on whether or not the greater solicitude in respect to the spread of welfare in the direction of the multitude of the unemployed, the poor and the dispossessed, and in relation to the expansion and deepening of productive capacity, constitutes an effective localisation? Are the dynamic processes now expected to narrow the gaps in resource availabilities, then to eliminate the traditional dependence and finally to realise the hope of self-reliance not merely at the level of the Republic as a whole but at the level of the local and municipal areas (Appendix D1)?

Confronted with a projected peaking of crude petroleum output by 1980 and a decline thereafter at an increasing rate, an official Committee² has been forced to re-open this issue in perhaps the most immediate and practical of ways. Always the urgency of the development and welfare question expresses itself in the fiscal equation (and the more instrumental the State becomes to the solution, the more fiscal crises mirror the deeper issues of transformation). So will there be a fiscal crisis? Or will the revenue support the spending?

In the longer-run, the answer depends on the impact of the bag of projects, their draught on investible funds, their demand for imported inputs, their contribution to product, income, revenue and export earnings. In this regard the strategy for diversification and restructuring details projects in four main classes:

- (i) Major Industrial projects; (Table 4)
 - (ii) Minor Manufacturing projects;
 - (iii) Own-account activity in agriculture and manufacturing;
(Table 5 and 6)
- and (iv) Welfare/Construction. (Table 7)

Major Industrial Projects

These major industrial projects are distinguished from the typical post-war ventures in that they arise mainly from a determination to integrate the petroleum and natural gas industry into the matrix of national production. The lesson has been learnt that industrialisation must be led not so much by taste as by resources and home supply. This effort at transformation is beset by several problems however. First of all, is the limited planning and pre-action capability which has been inherited from some 30 years of industrial promotion and the related political economy. The coordination and execution of the projects is the responsibility of the Industrial Development Corporation with the help of the National Advisory Council, its Steering Committees and Task Forces but neither of these agencies is conspicuously well-endowed and to the extent that they are, it is at the expense of other activities of perhaps equally crucial claims.

Secondly, it seems that when the stage of execution comes, these projects will need to draw on the industrialised countries for technological and managerial inputs. The latter will almost certainly have to be harnessed on terms which, given the current state of trade in the world of energy and petroleum, may negate the attempt at national control. The hope is probable therefore, that the joint venture package deals will be settled on the basis of a high (foreign) loan to (national) equity ratio.

The third problem of the energy-based projects is that they demand enormous financial capitals, amounting, on the latest of escalating estimates, to over \$9 billion TT. or \$4 billion US. (Table 4). An important corollary of such high-financing is that, in anticipation of the spending, the staple must be extracted so as to build up adequate financial reserves. Inflation, however, may well require that an increasing amount be paid to sustain a given real investment capacity. It is therefore not surprising, finally, that the marketing of these projected outputs, problematic on the most optimistic assumptions, has had to remain a matter of unavoidable speculation. Onstreaming dates are still so uncertain that the Committee to review the fiscal outlook, projecting incomes for fully 10 years since these projects were originally mooted, could, from such colossal investments, project no revenue what-so-ever.

Minor Manufacturing

In the new regime of industrialisation, replacement manufacturing, dwarfed by energy-projects, seem to be also earmarked for modification by expanded displacement activity. In addition to the spin-off projects from the steel plant, the 1979 Budget identifies a range of "specific areas of manufacturing". Among these are food processing based on local agricultural produce as well as component elements for housing. If realised on any scale, both of these activities could represent a critical departure. But the legacy of taste and of established capacity implies that the old issues in manufacturing will survive for a considerable period still.

After three years of almost complete stagnation, this (traditional) sector, driven by the leap in income and demand and aided by purchase tax-reductions, jumped by 6% in 1975 and by twice that in 1976, confirming its staple dependence. The debate here therefore centres on whether or not a new thrust could not be made away from import substitution and towards export - oriented production so that the sector could henceforth generate its individual foreign exchange.

The issues here relate first, to the international wage-cost ranking of Trinidad and Tobago and secondly, to the economy's relation with its hitherto captive market, that of the Caribbean Community. The fear is that, with wage levels the equivalent of Brazil's, Trinidad and Tobago's manufacturing, though better off than, say, its Puerto Rican counterpart may not successfully compete with either Asian or even some Latin American rivals, notwithstanding access (under Lime) to highly industrialised markets. Moreover, there is an equal apprehension that the differential impact of the oil crisis may have created a fundamental conflict of interest between Trinidad and Tobago and the remainder of CARICOM. The former's comparative advantage in the Community may now be limited both by a failure to agree on needed reform of incentives and by a return, through protectionist devices³ of the kind already being employed by Guyana and Jamaica, and indeed, adopted in retaliation by Trinidad and Tobago, to the old market fragmentation.

Taken together, the fears, on both regional and international account suggest that the Trinidad and Tobago manufacturing sector is viable neither for import-substitution nor for export promotion. Its management (superior to other CARICOM) and its wage-labour (high-cost in the world) will be able to sustain competitiveness chiefly where they are in a position to count on the advantage of their own resources and of technology and organisation devised to optimise them.

Own-Account Activity

Own-account activity has never quite succumbed to the rigours of the post-war re-opening of the economy. Moreover, in manufacturing and distribution more than in agriculture, the sustained expansion of activity over the period has generated a considerable amount of fresh opportunity for residentiary involvement. It would therefore be an error to conclude from the superiority of the dynamic towards displacement of own-account activity over the dynamic towards its development means that the post war experience has been altogether negative. It may have been hugely negative on balance but not without bequeathing to the future the nuclei of precisely those possibilities which, in the past 30 years in particular, have been cumulatively under-exploited.

The post - 1973 petroleum revenues have provided new means of support for this residentiary sector. (Tables 5 and 6). What positive results will ensue would depend on how far the growth of income has been limited by the absorptive capacity of the economy, on what shifts take place towards and away from imports as income rises further beyond the \$2000 (US) per capita. Particularly relevant here, are:

- (i) the bottlenecks at the air and sea ports owing to the precipitous rise in import demand; and
- (ii) the frustrations of inland transportation deriving from the almost unlimited import capacity of the motor-assembly industry.

In a curious way, the increase in foreign exchange has tended to be self-defeating in both of these respects so that home demand has been groping towards exotic home production and turning invariably towards the virtually unlimited supply of services. The cultural revival in the arts began as an aspect of political and social upheaval in the early 1970's but its survival is not altogether unrelated to the unemployment noticed earlier while its current momentum is almost certainly fuelled by disposable incomes which cannot be readily spent on imports. This diversion of demand has therefore not only been providing opportunity for service and other residentiary outputs but has also been putting pressure on the entire infra-structure of welfare.

Welfare Construction

The enhanced demand for a whole new framework of public welfare has been explicitly acknowledged in the post 1974 Budgets and Budget Speeches. The emerging shape of this sector is evident from Table 7. A huge programme of construction is envisaged. It embraces extensive rehousing of the Central Administration in three complexes, a Hall of Justice, a National Library, a Medical Complex and Teaching Hospital, virtually complete port and airport reconstruction, widespread developing of housing estates, and the erection of parking facilities in the most completely built-up areas.

Inevitably, the problem arising from such a colossal increase in demand has been a widening resource gap in the building and construction industry. Here as in the major resource industries, the grave risk is that the necessary burden of foreign involvement might be altogether too heavy for the localisation programme.

2. Staple Expansion 1974-2000: Discernible Trends

The simultaneous thrust towards:

- (1) the active incorporation of petroleum and natural gas into the scheme of home production;
- (2) the reform of minor manufacturing and the rehabilitation of own-account activity;
- (3) the expanded programme of construction in support of public welfare and collective goods;

has been projected for the 24 years 1976 to 1996-2000. The aggregative and quantitative picture is presented in Appendix D2.

External Assistance Needed

The external assistance needed for this programme is as much in the field of technology and management as in the field of capital. Indeed, the need for the former is so acutely felt that measures have been explicitly set out in the 1979 Budget for procuring the critical inputs through a comprehensive scheme of "Government to Government Arrangements". The relevant passages have been presented here in Appendix D3. They reveal:

- (i) the official assessment of the advantages of the arrangements and
- (ii) the terms of collaboration between external factors and their internal counterparts.

The arrangements visualize a multiplicity of package deals with a range of industrialised countries, each involving an agreement between the two governments to organise just that transfer of private sector real resources which are thought to be required for the project or projects in question. Agreements already signed are as follows:

- Austria - Refurbishing of Cement Plant; design and building of new one.
- Canada - Design and construction of two airports. Possibly other projects.
- France - Design and construction of Medical Complex and improvement of hospitals. Possibly other projects.
- Netherlands - Provision of Drainage and Water Engineers. Possible extension to embrace management and development of ports and harbours.
- Sweden - Clearing of wrecks in harbour and provision of services to public sector agencies.
- West Germany - Water Engineers. Possibly other projects.
- United Kingdom - Projects to be identified.

In addition to this scheme of Government to Government package deals, the normal project involvement by international and multilateral agencies is envisaged: notably of the IADB in regard to the erection of Health Centres and the World Bank in relation to School Building.

3. Recommendations for Co-operation

It has been the custom to type the economy of Trinidad and Tobago as an open one. At issue here is not simply the fact that the country is small - a feature it shares with say, Hong Kong; or that its balance of payments account is the most important single account of all, a feature it shares with say, the United Kingdom. What the concept of openness gropes for is something else and that something - it must be insisted upon - is not sufficiently well defined by any of the universal schemes of categorisation - be they couched in the bland officialese of the international agencies or in the more colourful imagery of competing Salvations. A large part of the development problem is the blurring of perception and the loss of nuance perpetrated by the pigeon-holing necessary to the universal perspective. The merit therefore of these country studies is that, as specified, they must sharpen insight by the feel we get of a particular situation.

The particular situation in Trinidad and Tobago, if it teaches us anything, makes one cardinal point which is that the repeated codification of countries into North-South and South-South, etc., borders on the absurd and constitutes a variation on the theme of impotence which opened with developed and underdeveloped countries, passed to First and Third with no Second World but with a Fourth lurking in the shadows, and so on. Meanwhile industrialisation and development strategies simply fall into yellow leaf.

If this process of futility is somehow to be turned around, what is most needed is a basis for identifying the processes which are crucial to the continued existence of dependent and non-industrial economy. Such is clearly the aim of the Joint Study and concern behind

the current demand for a new international economic order. It is only if we are correct about what those processes are in particular economic systems that we will be in a position to judge each conjuncture and gauge the options for action.

In parts A, B, and C of this Report, we have tried to distil the essence of the Caribbean condition by pointing to an algebra based on the particular numbers of Trinidad and Tobago. Perhaps this case is of unusual interest in the contemporary regional setting for the simple reason that here is an economy which alone enjoys an unequivocal balance of payments surplus and moreover, enjoys such an advantage at a moment when the international conjuncture seems highly favourable to a creative intervention. If this is the case, it means that change may be as possible as it has for long been necessary.

The point here is that such a preoccupation as the Lima Declaration and the accompanying target - unwittingly perhaps - postulates that change is possible everywhere at the identical time. While this is a perfectly valid ideology for an international agency to hold and an inescapable one besides, it is ideology nonetheless. The fact of the matter is that the convergence of forces favours movement in some of the countries only and is not congenial to movement in the rest of the world.

It would therefore be a great pity if the ideology of advance on all fronts be urged to a point where the methodology of Joint Study dealt too widely in common denominators. Sensing this risk, we have sought to achieve one objective only: that is, to identify what might be called the "primary contradiction" in Caribbean Economy and to locate it in an action frame and therefore in an historical and highly empirical context.

It follows that we should have approached this task in a frankly subjective way in the sense that we have deliberately selected a particular framework of historical interpretation. We started from the premise that the whole task of charting strategy for the future involves a judgement on the meaning of the past, our objectivity has consisted simply in making the historical framework explicit.

The meaning of the arithmetic can be grasped if the algebra is clear. But we must note that the arithmetic of change does not lend itself to universal planning schemes. Every country has to pick its way anew every single morning and Trinidad and Tobago - perhaps fortunately - is no exception to the rule.

Nevertheless, given the limitations of the Joint Study, we have hazarded here matrices which attempt to fit three strategies into a scheme of universal options. The charts are duly set out on accompanying pages. The strategies describe:

- (i) the path followed by Trinidad and Tobago from 1950-73;
- (ii) the course which seems to have been adopted since the onset of the oil bonanza and the huge balance of payments surplus in 1973-74; and
- (iii) an alternative strategy for the period starting then and closing at the end of the century 1996-2000.

Since the last of these strategies derives from a model of residentiary (self-reliant?) growth, we end with some notes towards such a model.

4. A Model of Residentiary Growth: Some Notes Towards a Strategy for the Period up to the Year 2000:

Trinidad and Tobago has been described as an open economy, and export-economy or an externally propelled economy. Income and product are therefore said to be a function not of investment (I) but of exports (X),⁵ which is correct in the sense that once export demand exists, investment will be forthcoming as a matter of course - needless to say, from outside the system. But this line of exposition is no more than an approximation to what the concept of external propulsion has really been groping for - and the latter is the process by which the generation of import capacity serves cumulatively to form taste and to direct technology, organisation and enterprise away from the potentials of the place. In other words an externally-propelled economy is one in which the normal process of provisioning with goods and services results in the progressive de-mobilisation of the productive capability of a people in their own environment. Ultimately, the only resort is migration or incorporation into a larger scheme of economy where the equation of supply and demand and therefore of production and trade can be brought into reasonable balance.

Trinidad and Tobago is not yet approaching the point of imbalance reached by Puerto Rico, or Martinique, or the Virgin Islands, Caribbean countries in which the vast majority of the foreign exchange is now obtained in the form of transfers and grants on government account and where the once highly productive sectors have been driven out of action. But we have seen that Trinidad and Tobago's agricultural sector and their resource based manufacturing have been progressively declining in importance, yielding priority to the assembly of imported outputs in a variety of areas including the (small) livestock and the consumer-durable industries.

The central problem of the economy of Trinidad and Tobago today is therefore not to be studied in terms of a distinction between agriculture and industry, between heavy industry and light industry, or between import substituting and export promoting activity. The critical departments of production are not the wage goods department and the luxury goods department, or the consumer goods sector and the capital goods sector. The theory of income determination need not focus on the division of the product between rent, profits and wages; nor is it vital to disaggregate demand between consumption and investment. All of these classifications of activity are useful for examining real problems and can with profit be employed in economic analysis. But the crucial distinction is a distinction between residentiary activity on the one hand and staple activity on the other. That and that alone is the primary contradiction.

The Pure Plantation Economy caricatures in its most extreme form the process of making one economy slave to another one. Here productive capability is activated only to the extent that it increases the profitability of exports. The terms of factor employment are such that national income is zero. The economy lives to generate investment income for factors owned abroad. When the pure case is modified, the tendency to discriminate against domestic factors shows up in high and rising unemployment and the systematic displacement of domestic entrepreneurship and management. It follows therefore that a model of residentiary, self-reliant or internally-propelled growth must promote the process by which domestic factors and resources would be cumulatively engaged in productive and rewarding activity.

Translated into the needs of present Trinidad and Tobago with its huge earnings from petroleum, the elements of a residentiary development strategy immediately impose on the planners the three following objectives:

- (i) The Government must finally accept the responsibility for maintaining full employment and for developing national enterprise and management.
- (ii) Given the fact that the bulk of the foreign exchange earnings accrues in the first instance as revenue to the Government, steps must be taken to ensure the optimal level of earnings in terms of the needs of the national economy and the optimal distribution between sectors and groups of the resulting capacity to import.
- (iii) Given the higher use which services make of domestic factors - owing in part to the underdevelopment and distortion of the goods-producing sector - steps must be taken to engineer a shift in the direction of the former in both production and consumption. This shift however, is not to be merely a recognition of rigidity in the productive structure; it is to be the principal means of turning technology and taste in the direction of the creative genius of the people and their place.

The self-reliant economy in the Caribbean case may be divided into three main sectors:

1. The Staple Sector
2. The Welfare Sector
3. The Residentiary Sector

The Staple Sector

Turning the dynamic processes of the economy in the opposite direction where they would activate rather than immobilise domestic capabilities does not imply closing down the staple sector but simply closing it off from the rest so that the economy can be free to form taste and develop technology and organisation in a highly autonomous way. This has been the main Caribbean lesson derived from the post 1959 Cuban experience. Self reliance is not to be confused with self-sufficiency; international trade will not be discontinued but will indeed, be conducted at a higher level of activity owing to the greater mobilisation of productive resources, and the higher level of output, income and spending. What will change is the composition of imports and exports and what will fall is the ratio of these two to gross domestic product.

Activity in this Sector will fall into two sub-sectors. The first will be the export sector, essentially the mining of petroleum and natural gas and the related industries involved in refining and downstream elaboration and manufacture. The purpose of this sub-sector is the same as was assumed in the Ricardian theory of international trade: to provide the capacity to import. In other words, the staple sector must not therefore import in order to facilitate export-specialisation. On the contrary it must export in order to be able to buy from abroad what it is necessary and cheaper for the whole country to import than to produce for itself at home. As such the rate of growth (and therefore of extraction of oil and gas) of this sector must be determined by the demand for imports by the rest of the

economy. The role of the sector, it follows, will be no less crucial to the whole than traditionally it has been. It follows further, that the sector must possess characteristics such as those which we have dramatised in the following assumptions:

1. It must be controlled by the Central Government in co-operation with the local municipalities so as to ensure its responsiveness to the demands for general welfare.
2. It must employ a technology which makes it competitive in the export markets - in practice, this means that, initially, it will be highly capital intensive, will import a great deal of its equipment and, on contract, buy packages of professional and technical services from abroad.
3. Its labour input will be infinitesimal - to all intents and purposes, it will be zero which is what we here assume.
4. It will earn a high proportion of the national foreign exchange - indeed, we here assume that it will generate all the export earnings.
5. All the above earnings will accrue to the public sector and not to private individuals.
6. The level of earnings will be subject to conservation-control as is required with a rapidly wasting asset.

A second sub-sector will function on the import side of the Staple Sector. It will import final goods for consumption and investment and will utilise imported raw materials, imported intermediate goods and external factor services in assembly activity at home. Its size and level of operation will depend in part on the import needs of the non-staple sector itself. Whether the present level of assembly (and mode of expansion) will be maintained or whether it will be curtailed will depend on what displacement is found to be feasible in the Residentiary Sector described below.

What must be appreciated at this point is that the Staple Sector being here described is a "Port of Trade" in the sense suggested by Polanyi.⁶ Its function is to insulate the home economy not so much physically as institutionally from the rest of the world. All external transactions, it must be stressed, will be organised through this sector so that national economic life would achieve some distance from the forces that have traditionally played upon it from the outside world. From the export side of the sector a net flow of foreign exchange will be made available to all the other activities including the Assembly sub-sector. Since this flow will be regulated to suit the overall needs of the economy, trade in fact becomes "administered trade" which is not, however, necessarily the same as State-trading. Perhaps the best arrangement in the case of Trinidad and Tobago might be to place the responsibility for importing, merchandising and assembly in the hands of practised traders⁷ on the absolute condition that their enterprises be publicly owned, the implication being that on the import as on the export side of the staple sector, there be equity held by the Central Government as by the municipalities on behalf of the local populations.

The Welfare Sector

In this sector, the activities will be:

- (a) the provision of welfare services embracing the traditional public utilities as well as the full range of social services and collective goods such as school meals etc., and
- (b) national security and administration, central and municipal.

Here employment will undoubtedly be considered but the stress must be on high productivity and great efficiency rather than on job-creation. The objective of the sector must be to generate that level of output necessary to provide the entire population with an adequate base of welfare on a fully equitable basis. This sector will have the first claim on the net foreign exchange earned by the export sub-sector.

The Residuary Sector

The rest of the economy will constitute the Residuary Sector embracing production in Agriculture, Manufacturing and Services. The chief characteristic of this sector is that it will seek the fullest exploitation of domestic productive potential. For national and local factors, then, it will provide a high participation. It is here that the initiative and the creativity of the population will be given every chance to flourish. The accent, it follows will be on high enterprise and abundant employment.

Residuary production will be carried out mainly (and for the purposes of the model, it is assumed, only) by own account enterprises. This is the sense in which participation involves both high enterprise and high employment. Entrepreneurship, labour and management will be simultaneously provided and the reward to them will be a mixed factor income. This is the institutional precondition for the evolution of technology and organisation in a direction which is consistent with full employment. It is the alienation of the accumulation process from labour which accounts for inordinately capital-using technological progress. A shift-to-profits represents not only an expropriation of product from labour; it also creates the vehicle by which employment-destroying technology is introduced: that is to say, capital by itself.

Here the choice of technology will be governed by two factors. The first is the mode of income accrual as a joint reward to combined factors engaged in own-account activity while the second is the control exercised by the community as a whole over the distribution of foreign exchange. This Residuary Sector will have the second claim on the net foreign exchange of the export sub-sector. Given the residual left by the Welfare Sector, the import sub-sector will be charged to release that level of intermediate and capital imports most consistent with full employment in the Residuary Sector. Naturally, output will contain an elevated level of services which, on the whole, tend to be more intensive of both labour and domestic resources. In Trinidad and Tobago there most certainly exists a large unrequited demand for services in the arts and in sport. If the foreign exchange needs of these activities are met, the final residual will then be available to the Assembly sub-sector in which will be assembled imported intermediate goods and from which can be bought imported final goods.

Factors of Production

From the preceeding discussion, it can be seen that the classification of productive factors into categories such as land, labour, capital and entrepreneurship and the determination of their rewards by substitutions on the margin are not considered relevant to this model or indeed, to any model which tries realistically to capture the special circumstances of the economy of Trinidad and Tobago (and the rest of the Caribbean).

Here we shall consider Imports as our first factor of production. In the case of intermediate and final goods, price is given by the world market. Where the imports include capital, know-how, management, etc., price is set by package-deal negotiation with foreign corporations. As in the case of the joint factors engaged in own-account activity in the residentiary sector, so in the case of the combined factors and materials involved in transactions with the Import sub-sector, the reward for participation is Mixed Factor Income.

Following this line of reasoning, we emerge with four factors of production:

- (i) Natural resources (land)
- (ii) Imports (of goods, services, know-how, and management)
- (iii) Wage labour services, and
- (iv) Mixed own-account factor.

Natural resources and imports will be indispensable factors of production in all sectors; wage-labour will be assumed to be confined to the Welfare Sector and the Mixed own-account factor to the Residentiary Sector.

The corresponding income receiving classes along with their type of income follow logically from the above:

- | | |
|----------------------------|------------------------|
| 1. Corporations | Mixed Corporate Income |
| 2. Organised Labour | Wages |
| 3. Own-Account Enterprises | Mixed Factor Income |
| 4. Government | Public Revenues |

Corporate Income will of course accrue to the corporations in the (Staple Export and Import) Sector. Part of it will be earned by Imports and part by the factors provided from the home economy. Wages will accrue to organised labour and will be determined as now by negotiation and bargaining.⁸ Mixed Factor Income will accrue to the factors employed in the Residentiary Sector and Government Revenue will accrue:

- (a) from Central and Municipal Government holdings of equity in the joint venture corporations in the import and export sub-sectors;
- (b) from profits from utilities and other State enterprises in the Welfare Sector; and
- (c) from taxation receipts.

To the extent that the dividends in (a) above derive from corporations engaged in export activity, they are determined along with the rest of such corporate income and represent part of the national earnings of foreign exchange. Revenues from utilities will be based on a pricing system, which guarantees an equitable distribution of welfare while tax revenues will remain, as should be the case, a policy variable aiming at the required allocation of resources and the desired distribution of income.

The foregoing description of the economy leads to the following national income identities in the model:

Personal Income = Wages + Mixed Factor Income + Dividends out of Corporate Income.

Corporate Income = Undistributed Mixed Income retained in Savings and Investment Account

Private Income = Dividends to Central Government and Municipalities out of Corporate Income, Earnings of central and local government from Utilities and State Enterprises.

National Income = Private Income + Government Income

Income Going Abroad = Expatriations Out of Corporate Income.

Disposal of the National Product

In the proposed model, consumption will, as usual be at two levels: at the collective level in regard to the goods and services provided by the Welfare Sector and at the individual (or household) level in respect to the supply offered by the Residentiary Sector. In view, however, of the impetus to be given to the arts and to sport, an unusually high degree of the consumption output of the Residentiary Sector will have to be the object of collective consumption.

Three elements of a desirable consumption policy may at this point be re-iterated the better to emphasise their importance. The first is the need to discontinue the patterns of consumption which is dictated by the capacity to import. The second is the need to price outputs in the Welfare Sector in such a manner as would ensure the broadest possible access to the entire citizen body. The third is that for each household and citizen group there must be a fair balance in total consumption between goods and services, between imports and domestic outputs, and between utilities and basic goods, on the one hand, and luxury supplies on the other.

The shift in the traditional make-up of aggregate consumption is only one of the factors which are meant to promote a greater activation of domestic capabilities. The technology employed, through its effect on, among other things, the availability and efficiency of national management, is another. The geographical juxta-position of agriculture and industry, which an island environment admits, the choice of business organisation which would combine own-account capital with own-account labour and other own-account factor inputs, and conceivably, employment of some of the population (and perhaps of all of the households), part-time in the Welfare Sector and part-time in the Residentiary Sector, might all add up to an economy in which supply would create its own demand in the fashion envisaged by J.B. Say's celebrated law.

The macro-model of the North Atlantic economy has perhaps over-emphasised the value of Adam Smith's specialisation and the related division of labour. More recently, it has become locked into the institutional assumptions of the Keynesian system of thought. The inability to resolve the problem of inflation accompanied by a deficiency of demand

for both labour and commodities (stagflation) and the growing irrelevance of economics are due directly to the use of macro-models which illumine sheer irrelevancy. This problem which is only now arising within the North Atlantic has been always present in the world of the colonial hinterlands where economics has hardly been anything else, as we have noted earlier, but an ideology of metropolitan domination.

The greatest legacy of colonialism has been not so much a technological as an intellectual subjugation. It follows that the first step towards self-reliance must be a placing of the economic issues in realistic perspective. This is obviously necessary in the sense that the current importance of the staple sector, of capital-intensive technology in the export sector, and of merchant-assembling in the import replacing sector must be acknowledged as a fact of life which limits the options for creative intervention. But it is also necessary in the other sense that the contradictions on which we focus must be the decisive ones.

The distinction between residentiary and staple activity is no less messy than that between consumption and investment or between capital goods and consumer goods. But then, it is not more messy either. We have insisted all along that it is, nevertheless, the crucial distinction to be made, so that not only must macro-models elaborate its full significance for the level of activity and for the direction of development but, at the purely technical level, it is further necessary to devise operable indices of import displacement (as against import replacement) as guides to practical measures of policy.

By the same token, there is need to identify the signals by which the progress of the economy towards self-reliance might properly be monitored.

In the discussion above, it has, for example, been implied that appropriate technology would necessarily embody "neutral" technical progress - in the Joan Robinson sense of the term. Moreover, it has been suggested that the goods-component of consumption should decline in relation to the services component. Finally, it has been anticipated that with increasing self-reliance and a progressive activation of productive capability, the level of output would tend on the whole to increase, and with that, the level of trading activity as well, even as the ratio of trade to domestic product should show a definite tendency to fall.

To begin to look at the picture in this way is quite often to state the obvious. But yet it is astonishing how much of the obvious is obscured by our ideological lenses. Certainly, much of the impotence of economic policy in the new states is to be explained by the unwitting and therefore unquestioned assumption that one single world system has been created over the last five hundred years by Atlantic capitalism so much so that many students of political economy insist that the only strategic choice lies between socialist and capitalist economic organisation. Here we see how important it might be to explore what system of economy and society has emerged from the particular 500 year period. To the extent that systems such as the Caribbean economic system exist in their own right with peculiar structural features, and peculiar laws of motion, relevant macro-models must seek to make an appropriate fit.

The economies in the new states have often been disembedded from their societies under the rules of incorporation of the international order which has been inherited from the past. They have been turned in the wrong direction. The whole system of economic analysis, national accounting and inter-industry description of relationships must seek accordingly, to expose the distortions and the rigidities which lie behind the generalised and quite uninformative notion of developing underdevelopment.

Recommendations

The choice of path of self-reliance would dictate a radically altered scheme of international co-operation, international and multilateral, bilateral, regional. Perhaps the greatest gain to be derived from co-operation lies in the field of theoretical and historical study, and of accurate empirical reporting of contemporary economic developments in their particular cultural and political context.

At the international level, we therefore propose the following four measures:

- (i) The creation of a larger number of regional Economic Commissions. Certainly ECLA should be definitively split into three or four separate regional agencies, one for the Caribbean. A similar treatment seems to be called for in regard to the ECA and ECAFE.
- (ii) Each Commission could profitably be equipped with a Secretariat of which the role would be to keep data banks, to monitor technological and organisational developments relevant to its culture-sphere and to provide the nexus of regional advisory services.
- (iii) The main external reporting on the economic life of UN member countries should come from neither the IMF nor the IBRD but from an agency drawing together the resources of the FAO and UNIDO with some contribution from UNCTAD. The focus should be shifted from external relations, trade and finance to the internal relationships of production.
- (iv) The United Nations University should be charged to launch a programme of comparative study of economic systems and the theoretical work should arise directly out of the needs of practical preoccupations.

At the bilateral level, there would seem to be continuing need for relations between countries on the one hand, and corporations and governments on the other - on progressively changing terms. Joint Ventures already describe a path of evolution in the direction of greater self-reliance though technological transfers within this framework could very well be negated if management and research capabilities were not simultaneously developed in a residential context.

CHARACTERISTICS MATRIX

Characteristics areas for co-operation	Industrialisation Strategies		
	Strategy 1: 1951-73 1	Strategy 2: 1974 - 2	Recommended Strategy: 3
Technology	Labour-intensive, imported. Geared to local resources and to inputs from the North.	Capital-intensive, imported. Large scale. (limited stress on adaptations to use of local materials and labour.)	Imported technology - highly capital-intensive for energy-based projects, and for import-replacing mfg. Labour-intensive technology for resource-based activity. Two legs.
TNC's	Vertically integrated. Close links with Head Office	Joint Venture between Gov't. & Corporations with limited vertical integration. State enterprises. Local control with or without ownership. Local corporations.	Minimal, selective, confined to energy-based activity. State enterprises, Local control. Local corporations.
Finance	Direct Foreign Investment and Concessional Assistance. Higher local tax-take.	Foreign borrowing with high ratio of foreign loan to local equity in case of proposed energy-based projects.	Minimal, selective.
Trade	For mfg, free trade aided by TNC access to markets. For commodity exports, preferential shelter.	Free trade and re-location via Joint Venture partners for large scale energy-based projects. Protection for traditional manufacturing.	Administered trade in both imports and exports. Selective imports and exports. Controlled levels.

CO-OPERATION MATRIX

Mechanisms areas for Co-operation	Industrialization Strategies		
	Strategy 1: 1951-73 1	Strategy 2: 1974 - 2	Recommended Strategy 3
Technology	North-South. Direct technology transfers.	North-South. Co-operation for improved terms of transfer in favour of South (via Joint Ventures).	Resource-combination with region. Adapted technologies. Exchange migrations of skilled workers within region.
TNC's	North-South. Pioneer incentives.	Local Head Office.	Highly selective -re-oriented towards national decision-making.
Finance	North-South with TNC's and South-South. Gov't to Gov't loans, and grants. Multilateral aid.	Element in Joint Venture Package (TNC's & Gov't).	South-South; North-South; East-South; regional payments union (CARICOM).
Trade	North-South. Regional grouping. South-South via TNC to their traditional markets.	North-South. Limited South-South via Regional grouping.	Bilateral exchanges North-South; South-East; South-South. Preferential trading in region. Export-substitution with South.

ILLUSTRATIVE ISSUES

REPUBLIC OF TRINIDAD AND TOBAGO

<p align="center">Strategy Issues</p>	<p align="center">Strategy: 1951 - 73 A</p>	<p align="center">Strategy: 1974 - ? A</p>	<p align="center">Recommended Strategy: A</p>
<p align="center">Technology</p>	<p>Built into capital goods and expertise.</p>	<p>Joint Venture packages (mainly TNC's). Gov't to Gov't recruitment of management corps, technical cadres and TNC'S services. Fiscal encouragement for inputs of regional origin.</p>	<p>Regional Techretariat to identify and explore options and bargain with Gov'ts and TNC's. Co-operative R & D. Exchange of licensing agreement contracts. Joint technology registries.</p>
<p align="center">TNC's</p>	<p>Income-tax holidays, Depreciation allowances. Investment allowances.</p>	<p>Codes of Conduct.</p>	<p>Specific Task Force Contracts. R & D for Appropriate Technology.</p>
<p align="center">Finance</p>	<p>Initial Investment of TNC Capital. Re-investment of surpluses.</p>	<p>Government guarantees to bond issues raised directly by J.V. enterprises. Direct issue of bonds by Gov'ts in North Capital markets.</p>	<p>Mutual balance of payments support at regional level.</p>
<p align="center">Trade</p>	<p>Duty Free Imports.</p>	<p>General Scheme of preferences. Fiscal incentives to export.</p>	<p>Collective bargaining -- producers' associations. Consumers' associations. Commodity Funds.</p>

The regional level perhaps provides the most fruitful opportunities for international co-operation largely because the region describes a culture-sphere within which the benefits of co-operation are easier to perceive and the costs easier to compensate. Here we propose five measures:

1. A progressive widening and deepening of CARICOM ultimately to embrace some 30 independent island-states stretching from Belize to Cayene and including Cuba and all the Greater Antilles as well.
2. Establishment of a Caribbean Common Fund in support of joint commodity exports, joint import-purchasing and intra-regional swapping.
3. Establishment of a Regional Resource-Combination Agency as a Division of a broadened Caribbean Development Bank.
4. Establishment of a Foreign Exchange Pool - for the West Indies initially - to provide mutual balance of payments support.
5. Establishment of a Regional Technical Service to man these agencies as well as the Economic Commission for the Caribbean with its Regional Techretariat.

FOOTNOTES TO PART D

1. Review of the Economy, 1976, p. 69.
2. Report of the Committee to Review Government Expenditure, passim.
3. Report of A Committee on a System of Selective Controls on Imports into Trinidad and Tobago, Port of Spain, 1978.
4. Some of the Agencies listed in Table 7 (e.g. the Hospitals Board) have merely been recommended by the National Advisory Council or proposed in public debate. The draft in the direction of a comprehensive welfare sector is, however, absolutely clear.
5. See Dudley Seers, "The Mechanism of an Open Petroleum Economy", Social and Economic Studies, Vol. 13, No. 2, June 1964.
6. See Polanyi, Trade and Market in the Early Empires, Glencoe, Illinois, 1957.
7. Here is a case where knowledge of history and the sociology are absolutely essential for judging what may be feasible in terms of economic organisation. As a cosmopolitan country swiftly built up through migration, Trinidad, though not so much Tobago, has come to have a peculiar pattern of occupational specialisation by race. Normally regarded as a problem, which it certainly has been in the framing of industrial, commercial and agricultural policies, it could be transformed into an opportunity in reorganisation which aimed to related continuing specialisation to the structure of existing capability in a context of equitable rewards. Economic insulation could well be facilitated by racial specialisation while self-reliance and cultural integration are developing organically through time.
8. The current framework of bargaining embraces Unions, Employers' and Employers' Associations and an Industrial Court - all operating under the umorella of an Industrial Relations Act. Fully two-thirds of the labour force fall outside this pale. In public debate, it has been suggested that a widening of the framework be effected through new patterns of representation in the Second House of Parliament and the location in that House of a process of national wage negotiation on an annual basis. Here again, a judgement of feasibility must take account of a peculiarity of the country - its small, city-state character.

APPENDIX D₁

THE NATIONAL PHYSICAL DEVELOPMENT PLAN

Dispersed Concentration 1978-2000

In 1978 the Town and Country Planning Division of the Ministry of Finance, Planning and Development published a National Physical Development Plan in which the recommended strategy for the period 1978-2000 was one of "Dispersed Concentration". This Plan followed closely on the Report of a Joint Select Committee of Parliament which had considered an increase in the powers of the local authorities.

According to an official interpretation published in Info '78*, the National Physical Development Plan noticed that urban concentration in the Capital Region had been "the dominant pattern" but that increasing concentration had begun to threaten "the basis on which the benefits of urban areas are founded". Hence the objective of the strategy of dispersed concentration is to promote balanced development throughout the country.

The Plan actually proposes certain off-centre growth areas such as Sangre Grande, Point Lisas-Couva, La Brea-Point Fortin, and Mayaro-Galeota. Regional Councils are also called for:

1. To bridge the gap between the national and local levels of decision-making;
2. To provide a framework at the local level for co-ordinating projects planned and implemented by the various government agencies;
3. To become responsible for programmes such as rural development, management of health and education facilities, etc.

In the logic of these proposals lies some more fully articulated form of local organisation compatible:

- a. With the city-state character of a small island; and
- b. With manageable public finance.

In some quarters, this is thought to require the creation of a nationwide scheme of municipalities.

* Public Relations Division of the Prime Minister's Office, Port of Spain, November-December 1978.

SOME PROJECTIONS TO THE YEAR 2000

Following the precipitous rise in oil prices in 1973/74, Trinidad and Tobago has enjoyed unprecedented surpluses both on the Government Budget Account and in the external balance of payments. Accordingly, there has been a radical alteration in prospects for both development and welfare. The Committee to Review Government Expenditure reported in late 1978 that the strong resource position had enabled the Government to reduce non-oil taxes and yet to build up substantial unspent balances in spite of an immense increase in expenditure on welfare and particularly on capital formation and capital acquisition.

Charged to assess the fiscal outlook, the Committee has offered some projections up to the year 1983. Two projections of revenue are advanced. Both anticipate a peaking of government income in 1980 and a decline thereafter to 1983, in the more favourable case by 5% per annum, in the less favourable case by 7.7%. High and low expenditure options are also considered the former reflecting a full emphasis on welfare programmes, the latter stressing instead the claims of the investment effort. Behind this exercise in articulating a choice of priorities lies the prospect that "The fiscal situation may be reasonably expected to alter significantly through the mid 1980's principally because oil production will enter a declining phase in the absence of new discoveries". (p. ix, Report)

Here our trajectory is longer and our perspective wider. Projections have been made by specifying long-run growth rates up to the year 2000 for four "autonomous" aggregates, namely:

- 1) Output of the petroleum and natural gas sectors including their downstream operations.
- 2) Exports.
- 3) Government Consumption Expenditure.
- 4) Government Transfers to the Private Sector.

Two separate projections have been made for the Petroleum Sector. PROJECTIONS 1 are based on the assumption that Trinidad and Tobago will be as lucky with this asset over the next twenty years as it has been over the past twenty. The sector has been subject to fluctuations as old discoveries of reserves have been depleted and new ones brought on stream. In the middle of the 1960's, the mining of oil made a definitive shift away from land towards submarine reserves. The estimated average annual rate of growth for the period 1965 to 1982 is 1.87%. In the first set of projections we assume that this rate will be maintained up to the end of the 20th century.

Oil Production Forecast, 1978-83

	1965	1978	1979	1980	1981	1982	1983
				(million)	(bbls)		
<u>Production</u>							
Amoco		50.8	46.7	43.6	36.9	34.7	27.7
Trinmar		16.4	17.2	17.6	17.0	16.8	16.1
Texaco		6.6	7.3	8.0	8.0	7.7	6.6
Tesoro		7.3	8.1	8.8	8.0	7.7	6.9
Trintoc		3.2	3.5	3.8	4.0	3.8	3.7
Total		48.9	84.3	82.8	81.8	73.9	61.0

Source: Report of the Committee to Review Government Expenditure, Trinidad + Tobago.

In PROJECTIONS II, we postulate two developments. The first is that proven petroleum reserves will, at the present rate of extraction, be depleted by 1984 (though the happier prognosis is that it will peak in 1981 and then decline rapidly thereafter). On the other hand, we retain an optimistic posture by our second postulate which is that reserves of gas will stand in for petroleum and play a modified staple role. Part of this sector's primary output will be sold abroad directly as liquid natural gas. The other part is predicated to become the basic input into a new energy-using industrial sector aiming its products essentially at the international market.

According to the official bulletin (Info. Nov. - Dec. 1978), the most recent estimate of gas reserves places the recoverable quantity at 12.04 trillion cubic feet. Of those, half (6.0 trillion) are already proven. On the basis of a Gas Reserve Study, the Ministry of Petroleum and Mines reckons that 8.6 trillion cubic feet will go towards domestic requirements up to the year 2017 leaving a surplus of only 3.44 trillion for liquefaction and export. Nevertheless, supplies are thought to be ample for well over 40 years. Even allowing for the fact that in order to export 1 million cubic feet of gas, 1.33 million must be brought to the plant to cater for consumption by heating in the liquefaction process, the Ministry has already approved an allocation of 4 trillion cubic feet for the LNG export sector. This reserve deficit is not at all serious given that full reserves are now estimated by discounting probably reserves and possible reserves at a risk of 50% and 80% respectively. Moreover, current reserve estimates do not take into consideration either the areas which are to be the subject of the next round of leasing or the so-called deep land horizons or the offshore sites under more than 600 feet of water.

In order to bring known reserves into use, several highly capital-intensive projects have been formulated. Table 4 in Appendix D₄ shows that these projects are expected to be phased in over a period. However, the assumption here is that they will all come on stream in 1985, the year after petroleum reserves are projected to dry up. The output of gas to be used by this sector and in the process of liquefaction for export has been valued at the current world price of approximately \$1.30 US per 1,000 cubic feet yielding a gross value of 1.1 billion dollars.

The capital requirements for the downstream operations (NRG-based industries) is valued at nine billion dollars and at an assumed capital-output ratio of five, the net stream of income generated in the first year 1985, should be 1.8 billion dollars. It is further assumed that the stock has a life of fifteen years and hence, applying the straight line method of depreciation, capital consumption allowances have been fixed at 0.6 billion dollars. Gross income of the operations have therefore been calculated at 2.4 billion dollars in 1985 and expansion is assumed to occur at the rate of 1.87%, i.e. the same rate as petroleum output over the past twenty years.

Exports have been disaggregated as follows: Petroleum; Gas; Energy-based Industries; Agriculture + Other Food; Manufacturing; Net Non-Factor Services. Petroleum exports have been consistently about three quarters of gross output of the sector and continuation of this ratio has been assumed. The whole of the output of gas and the energy-based industries is assumed to be exported. Agriculture has been declining inexorably over the past fifteen years and the assumption is that it will be maintained at the present level.

Manufacturing Consumption Expenditure and Transfers have been assigned a growth rate of 3%. With population growth predicted to be 1.7%, a margin of 1.3% per annum in living standards has been allowed for.

On the basis of the above specification of growth rates of the autonomous variables, the following dependent variables were derived.

- a) Direct taxes - 8% of Private Incomes. Estimated from the equation: Direct Taxes = $(0.1115 \times \text{Personal Consumption Expenditure}) - (0.11 \times \text{Government Transfer Payments})$.
- b) Indirect taxes less subsidies - Twelve percent of the value of imports (excluding imports of the NRG-based industries, which are treated as imports on Government account).
- c) Private Income - GDP at factor cost less the output of the Petroleum and Gas sectors + NRG-based industries.
- d) Imports - One third of Private Consumption Expenditure; two thirds of Gross Domestic Capital Formation (excluding investment in NRG-based industries); four-fifths of Gross Domestic Capital Formation in NRG-based industries.
- e) Gross Domestic Capital Formation Aggregate
- In the Case of Projection I.
 - One quarter of GDP at Market Prices, also reflecting the long term trend.
- Petroleum Sector
- Forty percent of Aggregate GDFC, also reflecting the long term trend.
- In the case of Projection II
- Gas
- One fifth of the output of the Gas sub-sector.
- NRG-based industries
- To provide growth of 1.87% and depreciation at 6.67% of the capital stock.
- f) GDP at Market Prices
- In Projections I, derived from estimating equation: $\text{GDP} = 2.27 \times (\text{Government Consumption Expenditure} + \text{Exports}) + (1.154 \times \text{Transfer Payments}) - (0.8 \times \text{Petroleum Output})$.
 - In Projections II, derived from equation: $\text{GDP} = 2.61 \times (\text{Government Consumption} + \text{Exports}) + (0.87 \times \text{Investment in Gas Sector}) + (0.52 \times \text{Investment in NRG-based industries}) - (1.61 \times \text{output in Gas and NRG-based industries})$.

- g) GDP at Factor Cost - GDP at Market Prices less Indirect Taxes plus Subsidies.
- h) Private Consumption Expenditure - In Projections I, derived from the equation: Personal Consumption Expenditure = (0.7 x CDP at Market Prices) + (0.777 x Transfer Payments) - (0.536 x Petroleum Output).

In Projections II, derived from the equation: Personal Consumption Expenditure = 0.83 x (GDP at Market Prices - Petroleum Output) + (0.94 x Transfer Payments).
- i) Balance of Trade - Exports less Imports
- j) Investment Income Payable - 52% of output of sector i.e. portion not accruing to Government and hence assumed to accrue to foreigners.
- k) Interest Payable on Loan to NRG Industries - 6 1/2% of diminishing balance, the original loan being as officially anticipated, 60% of the proposed outlay of \$9 billion i.e. \$5.4 billion.
- l) Investment Income Receivable - The main item here is Interest on reserve balances. The Committee to Review Expenditure projects a similar aggregate at 8% up to 1983 but over the longer run reserve balances may not survive on any scale. Hence we hazard no estimate and by so doing we exclude the item from the computation.
- m) Capital Inflows - We have included only those inflows which will provide investment funds for the Petroleum and Gas sectors along with loans for the NRG-based industries. Inflows for investment in other sectors have not been projected.
- n) Government Revenue - 48% of Petroleum (Gas) Output + Direct Taxes + Net Indirect Taxes.

ECONOMY OF TRINIDAD AND TOBAGOPROJECTIONS I\$ M. T.T.1976-2000

	<u>1976</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>
1. STAPLE (Petroleum)					
Output	3076	3312	3634	3987	4798
2. GOVT. CONS. EXP.	784	882	1023	1186	1594
3. GOVT. TRANSFERS	127	143	166	192	258
4. EXPORTS	3079	3304	3612	3950	4739
(Staple)	(2285)	(2461)	(2700)	(2962)	(3564)
(Agric.)	(248)	(248)	(248)	(248)	(248)
(Mfg.)	(104)	(117)	(136)	(157)	(211)
(Net Non-Factor Services)	(442)	(478)	(528)	(583)	(716)
5. GDP at MP.	6457	7037	7861	8789	11071
(Pers. Cons. Exp.)	(3081)	(3394)	(3851)	(4378)	(5717)
(G.D.C.F.)	(1614)	(1760)	(1965)	(2197)	(2768)
(Govt. Cons. Exp.)	(784)	(882)	(1023)	(1186)	(1594)
(Exports)	(3079)	(3304)	(3612)	(3950)	(4739)
(Less Imports)	(2101)	(2303)	(2590)	(2922)	(3747)
6. IT. - SUBSIDIES	251	276	311	351	450
7. GDP at FC.	6206	6761	7550	8438	10621

PROJECTIONS I I\$ M. T.T.1976-2000

	<u>1976</u>	<u>1984</u>	<u>1985</u>	<u>1990</u>	<u>2000</u>
1. STAPLE OUTPUT	3076	3312	3500	3837	4614
(Petroleum)	(3076)	(3312)	(-)	(-)	(-)
(Gas)	(-)	(-)	(1100)	(1206)	(1450)
(NRG-based Ind.)	(-)	(-)	(2400)	(2631)	(3164)
2. GOVT. CONS. EXP.	784	993	1023	1186	1594
3. GOVT. TRANSFERS	127	161	166	192	258
4. EXPORTS	3079	3548	4452	4825	5789
(Petroleum)	(2285)	(2650)	(-)	(-)	(-)
(Gas & NRG.)	(-)	(-)	(3500)	(3837)	(4614)
(Agric.)	(248)	(248)	(248)	(248)	(248)
(Mfg)	(104)	(132)	(136)	(157)	(211)
(Net Non-factor Services)	(442)	(518)	(528)	(583)	(716)
5. GDP at MP.	6457	7959	9572	10534	12954
(Pers. Cons. Exp.)	(3081)	(3988)	(5176)	(5720)	(7057)
(G.D.C.F.)	(1614)	(2992)	(2253)	(2477)	(3019)
(Govt. Cons. Exp.)	(784)	(993)	(1023)	(1186)	(1594)
(Exports)	(3079)	(3548)	(4452)	(4825)	(5789)
Less Imports	2101	3562	3332	3674	4505
(Cons. & Raw Mat.)	(1025)	(1329)	(1725)	(1909)	(2355)
(NRG-based Ind)	(-)	(1440)	(624)	(684)	(824)
(Petroleum)	(350)	(-)	(-)	(-)	(-)
(Gas)	(-)	(183)	(183)	(201)	(241)
(Other Domestic)	(726)	(610)	(800)	(880)	(1085)
6. IND. TAX - SUBS.	251	255	325	359	462
7. GDP at FC.	6206	7704	9237	10174	12492

PROJECTIONS I AND II

RESOURCE AVAILABILITIES

The Budget Balance \$ m.

AGGREGATES	YEAR									
	1976	1980	1984	1985		1990		2000		
	I	I	II	I	II	I	II	I	II	
A ₁ TOTAL CURRENT REVENUE	1967	2240	2287	2481	3831	2747	4205	3381	5106	
(Direct Taxes)	(325)	(374)	(442)	(426)	(578)	(482)	(636)	(628)	(784)	
(Net Ind. Taxes)	(251)	(276)	(225)	(311)	(325)	(351)	(359)	(450)	(462)	
(Petroleum Taxes)	(1391)	(1590)	(1590)	(1744)	(-)	(1944)	(-)	(2303)	(-)	
(Gas Taxes)	(-)	(-)	(-)	(-)	(528)	(-)	(579)	(-)	(696)	
(NRG Taxes)	(-)	(-)	(-)	(-)	(2400)	(-)	(2631)	(-)	(3164)	
A ₂ GOVT CURRENT EXP.	911	1030	1154	1189	1189	1378	1378	1852	1852	
(Cons. Exp.)	(784)	(887)	(993)	(1023)	(1023)	(1186)	(1186)	(1594)	(1594)	
(Transfers)	(127)	(143)	(161)	(166)	(166)	(192)	(192)	(258)	(258)	
A ₃ PRIMARY SURPLUS (A ₁ - A ₂)	1056	1210	1133	1292	2642	1369	2827	1529	3254	
A ₄ G.D.C.F.	1614	1760	2992	1965	2253	2197	2477	2768	3019	
A ₅ PRIMARY SURPLUS as % of G.D.C.F.	65.4	68.7	37.9	65.8	117.3	62.3	114.1	55.2	107.8	

PROJECTIONS I AND IIRESOURCE AVAILABILITIESThe External Balance\$ M.

AGGREGATES	YEAR									
	1976	1980	1984	1985		1990		2000		
	I	I	II	I	II	I	II	I	II	
B ₁ BALANCE OF TRADE	978	101	-14	1022	1080	1028	1151	992	1185	
B ₂ LESS NET FACTOR										
SERVICES PAYABLE	1670	1722	2073	1890	923	2073	861	2495	754	
(Inv. Inc. + Depr.)	(1670)	(1722)	(1722)	(1890)	(572)	(2073)	(627)	(2495)	(754)	
(Int. on NRG Debs.)	(-)	(-)	(351)	(-)	(351)	(-)	(234)	(-)	(-)	
B ₃ BAL. ON CURRENT A/C	-692	-721	-2087	-868	157	-1045	290	-1503	431	
B ₄ CAP. INFLOWS	565	704	1355	786	325	879	-298	1107	362	
(DFI)	(565)	(704)	(275)	(786)	(275)	(879)	(302)	(1107)	(362)	
(Borrowings by NRG)	(-)	(-)	(1080)	(-)	(-)	(-)	(-)	(-)	(-)	
(Repayment of Loans)	(-)	(-)	(-)	(-)	(-600)	(-)	(-600)	(-)	(-)	
B ₅ BAL. OF PAYMENTS	-127	-17	-737	- 86	-168	-166	-8	-396	793	

These projections have been made in real terms employing the prices of 1976. Both sets depict a mature staple economy under persisting Golden Age conditions. The economy is mature in the sense that it is assumed to enjoy recurring staple revivals either through fresh finds of petroleum or through adequate substitutions of gas. It experiences persisting Golden Age in the sense that steady growth is anticipated on the basis of buoyant export earnings. This buoyancy is generated by sustained investment and a high net national capacity to import. Government revenue accrues on a scale large enough to support a secular growth in real per capita consumption on public account and yet to generate a substantial primary surplus.

When we assume that the economy will be as well favoured in the next twenty years as in the last twenty this is the pattern we intend. Public expenditure on development and welfare is meant to induce activity in the rest of the economy enough to sustain optimistic expectations regarding the growth of aggregate income even if certain problem areas such as a skewed distribution of income, an insufficiency of employment and a polluted environment may survive and require special intervention.

The actual rhythm of boom and slump could of course always make a difference to the short-run viability of the system but that is a matter of the way in which investment is phased in regard both to exploration and exploitation and of how soon new finds of staple are effectively brought on stream. In terms of basic resource availabilities, the long-term trend seems favourable as much on the balance of payments account as on the account of the government budget.

The picture of a favourable outlook is shared by both sets of projections. The significant difference between the two lies in the fact that, when gas replaces petroleum in Projections II, the economy is nudged nearer a more active incorporation of its staple resource into the matrix of domestic interdependence. More extensive downstream operations are envisaged. Moreover, national ownership is fuller with only a debenture participation specified for foreign capital the corollary of which is a more restricted flow of factor income going abroad.

The issue of national control still, however, poses itself, this time in terms of the choice of joint venture association and its impact on the long run dynamism of the sector in regard to technological progress, organisation, management and taste formation. In this respect, the projections are exceedingly realistic: they stress the fact that Trinidad and Tobago has not been and is not likely to be pressed to generate an ample investible surplus.

The short term problem lies in finding the planning capability to organise the downstream operations, to bring them on stream in time to compensate for the phasing out of petroleum and to dispose of the outputs in highly competitive international markets.

The long term problem is to turn whatever are the gains from the staple sector in the direction of a residentiary revival and an activation of domestic capabilities. The latter implies a regulation of the level and the allocation of import capacity, a judicious spread of welfare, a diversion of some investment towards non-staple activity, and some unorthodox choices in regard to business organisation and production techniques.

In a mature staple economy, the task of transformation is aggravated by the existence of entrenched habits so that the choices which recur in the next twenty years will not be quite the same as those which were neglected or avoided in the last twenty. At the same time, the next two decades will be approached with a rich experience of the dangers of a demand led modification which leaves the economy ultimately dependent on staple earnings of foreign exchange.

Projections I suggest that it might just be possible for Trinidad and Tobago to reach the end of the century on such a traditional basis. Projections II postulate a reprieve, after assuming a collapse of the old petroleum planks.

The real world may well witness, it appears, both a survival of the petroleum industry for another two decades and the entry of the gas sub-sector with its downstream operations. Yet the scenario sketched here presents an option the relevance of which can hardly be denied. The simple fact is that the export is a wasting capital asset. Trinidad and Tobago must choose to see that, during a Golden Age, the balance of payments and the budget balance may seem to make unnecessary precisely that transformation which is most eminently possible.

APPENDIX D₃Government to Government Arrangements

In addition to the adoption of a careful yet reasonably flexible policy relating to work permit applications, the government has been considering an alternative approach - namely, approaching a government directly and structuring an umbrella arrangement through which the foreign government will sponsor the implementation of a particular project.

The government has concluded that this approach, while novel in some respects, is similar in concept to the well established system of seeking assistance from international institutions, such as the World Bank and the IADB and in fact it was with the World Bank that we first raised the issue.

This approach, in addition to providing for quicker responses and more flexible and simple arrangements, would bring to Trinidad and Tobago the following advantages:

- (i) Once an overall umbrella agreement has been negotiated between the governments, the contracting of firms and the mobilisation of such firms would take a fraction of the time that is now needed. This may not appear to be a significant point, but there are instances that now exist where the appointment of a consulting firm using the traditional method of open competition and the Central Tenders Board procedure, etc. has taken more than a year in some cases as much as two years.
- (ii) The active lobbying with its undercurrents of corruption would be avoided.
- (iii) The particular firm would be subject to pressures both from the particular agency as well as its individual government.
- (iv) Special arrangements relating to matters such as taxes, duty free importation on equipment, etc. could be more easily handled.
- (v) Attractive financing packages could be negotiated with the individual country.
- (vi) Relevant training programmes, involving the movement of nations to the particular foreign country could be more easily organised.
- (vii) Difficulties with a particular firm could get the attention at the highest level.
- (viii) Through careful choice of the country and firm, specialist skills of the highest calibre can be obtained.

- (ix) The country and its citizens could benefit from cross-fertilization of different technologies.
- (x) No one country would dominate the commercial, financial and technological activities of Trinidad and Tobago. For example, this system would avoid the situation that has developed in the motorcar assembly industry, where at this point in time, Trinidad and Tobago is almost completely locked in with a technology from a single country which unfortunately has an appreciating currency which in turn is a major cause for rising costs of vehicles.
- (xi) The development of political goodwill on the international basis which would hold Trinidad and Tobago in good stead when it moves into the international marketing community.
- (xii) The possibility of including reciprocal agreements relating to goods being produced in Trinidad and Tobago for export to these various countries.
- (xiii) It will inhibit the growth of local commission agents who, for a percentage but without proficing any identifiable services, represent foreign firms of engineers and contractors.

The division has been given specific policy guidelines by the Cabinet. These include:

- (i) firm prices and schedules
- (ii) meaningful participation by local consultants, contractors and local suppliers of support services
- (iii) work permit regulations
- (iv) satisfactory financing arrangements
- (v) the provision of materials by the Government whenever these are not available in Trinidad and Tobago
- (vi) satisfaction by the Government that goods and services offered are at least internationally competitive and were contracted through standard and fair procedures
- (vii) veto powers of the Cabinet over the selection of any particular firm.

In this programme of intensive implementation over the next few years, the Government proposes the following innovative steps:

- (i) Classification of specific projects and programmes into the category of National Priority
- (ii) Further delegation of authority to the agencies or ministries responsible for the implementation of these National Priority Projects and acceleration of decisions by the Central Tenders Board for priority projects; the staff of the Tenders Board has already been increased.

- (iii) Adoption of the design/build approach for specific projects. Local consortia will be invited to compete for specific projects on this basis.
- (iv) The use of the strengths of the national state enterprises in this period of intensive implementation .
- (v) The introduction of a system of performance audit.
- (vi) Contracting of such nationals (local or repatriated) who are experienced professionals available to undertake on a two or three basis, project management functions for these projects.
- (vii) Encouragement and development of privately organised minor works contractors.

Source: Republic of Trinidad and Tobago, 1979 Budget Speech pp. 8 - 9 and again pp. 10a-11.

TABLE: 1 : Republic of Trinidad & Tobago: State Business Sector
\$m. TT

Company	Initial Value of Holding
<u>A. Fully Owned Companies</u>	
1. Trinidad and Tobago Oil Company (TRINTOC)	93.6
2. British West Indian Airways	63.9
3. Caroni Limited	34.2
4. Trinidad and Tobago Telephone Company	25.0
5. National Petroleum Marketing Company	23.5
6. Trinidad Cement Limited	17.6
7. National Gas Company	15.6
8. National Commercial Bank	15.0
9. Forres Park Limited	4.2
10. Trinidad and Tobago Television Company Limited	3.8
11. Orange Grove National Sugar Company	3.6
12. National Broadcasting Service	1.8
13. Iron and Steel Company of Trinidad and Tobago (ISCOTT)	1.8
14. Trinidad and Tobago Air Service (TTAS)	1.7
15. Trinidad and Tobago Printing and Packaging Limited	1.6
16. National Feed Mili Limited	1.5
17. Non Pareil Estates Limited	1.4
18. National Agro Chemicals Limited	0.9
19. Trinidad and Tobago Export Credit Company	0.2
20. Trinidad and Tobago Lime Products Limited	0.1
21. Trinidad and Tobago Forest Products	-
Sub-Total	295.4
<u>B. Majority-Participation</u>	
1. TEXTEL	11.7
2. Agricultural Development Bank	10.4
3. Point Lisas Port Development Company	10.1
4. National Fisheries Company	7.4
5. Trinidad Bagasse Products	4.5
6. Development Finance Corporation	4.0
7. National Flour Mills	2.1
8. Port Contractors Limited	0.8
9. Trinidad and Tobago Meat Processors Limited	0.6
10. Shipping Corporation of Trinidad and Tobago	0.5
11. Trinidad-Tesoro	0.1

APPENDIX E₁

Cont'd....

TABLE 1 : Republic of Trinidad & Tobago: State Business Sector\$m. TT

Company	Initial Value of Holding
<u>B. Majority-Participation</u>	
12. Arts and Craft Export Company	-
13. Trinidad Nitrogen Company (TRINGEN)	-
Sub-Total	52.2
<u>C. Minority-Participation</u>	
1. Allied Inn-Keepers (Holiday Inns)	3.3
2. NAMUCAR	3.0
3. Maritime Life Insurance Company	2.1
4. Workers Bank	1.5
5. West Indies Shipping Corporation (WISCO)	1.4
6. Caribbean Food Corporation	1.3
7. Trinidad and Tobago Mortgage Finance Company	1.2
8. Caribbean Investment Corporation	1.1
9. Neal and Massy Holdings Limited	0.8
10. CARICOM Corn and Soya Company	0.6
11. Angostura Bitters Limited	0.4
12. National Brewing Company	0.2
Sub-total	16.9
TOTAL	364.5

APPENDIX 24TABLE 2 : Operations of Special Long Term Funds\$m. TT.

Funds	Total Receipts 1974-78	Total Expenditure 1974-77
1. Food Development Fund (including sugar)	40.	14.3
2. Fisheries Development Fund ⁸	74.1	29.0
3. Omnibuses Renewals Fund	262.6	56.6
4. Petroleum Development Fund	893.3	535.5
5. Petroleum Development Institute Fund	3.0	
6. Institute of Banking Fund	3.0	
7. Infrastructure Development Fund (formerly Industrial Sites and Services Fund)	320.4	102.6
8. Central Marketing Agency Fund	5.4	0.1
9. Caribbean Integration Fund	5.3	4.1
10. Scholarship Fund	2.0	
11. Primary School Improvement Fund	7.	4.5
12. Reserve for Building Projects Fund	17.1	3.4
13. Education Fund	189.4	123.9
14. Port Development Fund	95.7	46.8
15. Water Resources Fund	395.5	61.8
16. Roads Fund	182.	58.9
17. Housing Fund	334.3	9.8
18. Sports Fund	101.1	1.6
19. Drainage Fund	30.	5.3
20. Telecommunications Fund	145.4	4.7
21. Electricity Development Fund	59.4	33.1
22. Health Fund	19.4	5.2
23. National Training Fund	1.7	3.0
24. Recruitment and Settlement of Nationals Fund	1.5	-
25. Air Transport Fund	204.	66.1
26. Social and Community Development Projects Fund	13.5	0.8
27. Airport Security Fund	2.0	0/8
28. National Parks Development Fund	15.	-
29. Co-operative Societies' Development Fund	13.	2.7
30. Culture Fund	20.	-
31. Pre-Investment Fund	20.	-
32. Tobago Development Fund	50.	-
33. Land Acquisition Fund	10.	-
Carried forward	3536.1	1174.5

Cont'd....

TABLE 2 : Operations of Special Long Term Funds\$m. TT.

Funds	Total Receipts 1974-78	Total Expenditure 1974-77
Brought forward:-	3536.1	1174.5
34. Local Government Areas Fund	10.	n.a.
35. National Shipping Services Fund	30.	n.a.
36. Sewerage Fund	30.	n.a.
37. Airport Fund	20.5	n.a.
38. Equipment Fund	25.0	n.a.
39. Library Services Fund	10.	n.a.
40. Building Materials Fund	20.	n.a.
41. General Industrial Development Fund	20.	n.a.
42. Private Housing Estates and Services Development Fund	250.	n.a.
43. Primary School Construction and Equipment Fund	25.	n.a.
44. International Marketing Organisation Fund	10.	n.a.
45. School Feeding Programme Fund	2.	n.a.
46. Joint Services Staff College Fund	10.	n.a.
TOTAL	3989.6	1174.5
Surplus 1974-77	+ 1801.7	

APPENDIX D4TABLE 3: Central Government Expenditure - An Economic Classification, 1972-1977

	. 1972	. 1973	. 1974	. 1975	. 1976	. Prel. 1977	Growth Rate 1973- 1977
	(\$ M.)						(% p.a.)
Current Expenditure	421.5	456.0	864.0	864.0	1161.0	1308.4	30.1
Wages and Salaries	208.0	227.4	343.0	374.1	369.3	605.3	27.7
Goods and Services	87.5	73.0	98.7	212.4	282.4	290.0	41.2
Interest	29.5	34.6	51.2	46.8	43.2	42.6	5.3
Transfers and Subsidies	96.5	121.0	188.5	230.7	366.3	370.5	32.3
Capital Expenditure	124.1	107.7	278.7	353.2	729.9	953.7	72.5
Direct	65.0	62.7	87.9	189.3	160.6	270.5	44.1
Loans and Transfers	41.0	41.9	117.0	117.1	481.8	665.1	99.6
Equity Partici- pation	18.1	3.1	73.8	46.8	87.5	18.1	55.4
TOTAL EXPENDITURE	545.6	563.7	960.1	1217.2	1890.9	2262.1	41.5
(as % GDP at current market prices)	(25.5)	(22.0)	(24.9)	(22.5)	(29.7)	(30.8)	
<u>Memorandum item</u>				(per cent)			
Current Expenditure	77.3	80.9	71.0	71.0	61.4	57.8	
Capital Expenditure	22.7	19.1	29.0	29.0	38.6	42.2	
Total Expenditure	100.0	100.0	100.0	100.0	100.0	100.0	

Source: Report of the Committee to Review
Government Expenditure, p. 9

APPENDIX D₁TABLE 4 : Trinidad & Tobago: Projected Investment in PetroleumDownstream Projects

Projects	Start up Year	Estimated Cost \$m. TT	Estimated ¹ Peak Requirement	Estimated ² Manpower Required
1. TRINGEN ammonia plant (51/49 joint venture with W.R. Grace Co.)	-	276.0	-	-
2. Iron and steel project (100 per cent government owned with possible technological partners)	1978	720.0	3000	1000
3. Fertilizer plant (51/49 joint venture with Amoco)	1981	560.0	1500	200
4. TRINTOC (formerly Shell) refinery (upgrading)	-	700.0	-	-
5. Aluminium Smelter (100 per cent government owned with possible participation of Guyana and Jamaica)	1983	662.0	2500	1200
6. L.N.G. Complex, including tanker fleet and pipeline (partners Tenneco, People's Gas Companies)	-	3,600.0	-	-
7. Petrochemical project (joint venture with Texaco)	-	360.0	-	-
8. Olefins-Aromatics (petrochemical complex)	-	2,000.0	-	-
9. Methanol production	1982	360.0	650	200
10. Pt. Lisas Marine Facilities	1979	-	150	-
11. Pt. Lisas Industrial Estate	1978	200.	35	-
12. Power Station (T&TEC)	1977	-	150	120
13. Cement Plant Expansion				

1. Estimated Peak Manpower requirements during construction

2. Estimated Manpower requirements for full capacity.

TABLE 5 : I.D.C. Small Business Loans Approved

	<u>Nos.</u>	<u>Amount</u> <u>\$m. MT</u>
1. Loans Less than \$15,000 (1977-78)	166.	\$ 1.04
2. Loans Over \$15,000. (1977-78)	84.	\$ 2.5
3. Loans for Manufacturing (1977)	22	\$.29
4. Loans for Non-Manufacturing (1977)	48	\$.466
5. Loans to Port (Urban) Areas (1977)	51	-
6. Loans to Plantation (Rural) Areas (1977)	19	-
7. Total Loans Approved: 1976-78	287	\$ 4.0
8. 1 as % of 1+2	66.4	29.7
9. 2 as % of 1+2	33.6	70.3
10. 3 as % of 3+4	31.4	38.2
11. 4 as % of 3+4	68.6	62.8
12. 5 as % of 5+6	72.9	-
13. 6 as % of 5+6	27.1	-

Source: Trinidad and Tobago Review of
the Economy 1976-1978

TABLE 6 : Subsidies for Agriculture, Forestry and Fishing

<u>Activity</u>	<u>Subsidies</u>	<u>Activity</u>	<u>Subsidies</u>
1. Land Preparation	\$35./acre (9)	Local Imports	
2. Soil Conservation	\$10-\$20/acre and \$440/acre	(a) Manufactured fertilizer	50% of cost at point of manuf.
3. Gross Planting for livestock	\$50/acre and \$100/acre	(b) Ground lime- stone	50% of retail price
4. Frog hopper Control	50% not > 2000/acre	(c) Agricultural Chemicals	25% of cost or purchase price
5. Water for Agriculture	½ cost not > 2500/acre	(d) Fuel and Oil	Rebate of 12¢ per gallon
6. Grazing Pastures	\$100/acre up (10) to max. of 200 acres	Spraying equipment and machinery for agriculture	50% of cost, or purchase price
7. Coffee replanting/ rehabilitation	\$125/ acre (11) for 20 acres	Other equipment and machinery	25% of C.I.F. price and no duty.
8. Establishment of Orchards	\$125/acre (12) for 20 acres	Locally built boats	25% of cost not > \$1500.
		(13) Farm Products	Guaranteed prices 28¢-\$1.50/unit.

Source: Trinidad and Tobago Review of the Economy 1976-1978

APPENDIX D4TABLE 7 : Republic of Trinidad and Tobago: Welfare Sector

Entity	Financial Resources
1. Central and Municipal Government	Sustained out of Revenue
2. Water and Sewerage Authority (WASA)	User Charges. Operating deficits are subsidized by loans from Central Government which also finances capital expenditure.
3. Trinidad and Tobago Electricity Commission (T&TEC)	User charges. Capital expenditure is financed by operating surpluses and external loans channeled through the Central Government.
4. Telephone Company	User charges. Self-financing. Capital expenditure as above.
5. Public Transport Service Corporation (PTSC)	User charges along with loans and capital grants from the Central Government.
6. National Hospitals Board	Subsidised
7. Port Authority	User charges, loans, and small capital grants from the Central Government
8. National Housing Authority (NHA)	Rents, Interest, and amortization payments by tenants and mortgages. Current and capital contributions from Central Government.
9. Central Marketing Agency	Operation losses and capital outlays covered by the Central Government.
10. Industrial Development Corporation	Subsidised. Annual Grants.
11. Institute of Higher Education	Subsidised. Annual Grants.
12. Institute of Science & Technology	Subsidised. Annual Grants.
13. National Cultural Council	Subsidised. Annual Grants,
14. National Broadcasting and Publishing Service	Partly self-financing.
15. Sports and Recreation Commission	Subsidised. Annual Grants.

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SMALL-SCALE INDUSTRIES AND INTERNATIONAL ECONOMIC CO-OPERATION
THE KENYAN EXPERIENCE

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I. INTRODUCTION

The global economy is currently characterised by significant inequalities between countries, with the majority of poorer economies specialising in the production of primary products and the bulk of global industry being concentrated in the developed countries. Attempts to increase per capita incomes in the poorer countries have consequently centred on the promotion of industry. But hitherto, such industrialisation which has taken place, has been associated with significant and growing income inequality and unemployment which can, at least in part, be directly traced to the transfer of large-scale inappropriate production techniques from developed countries.

While it is often recognised that inequality and unemployment are not caused by the choice of inappropriate technology alone, the contribution of such technological choices to undesirable social trends cannot be denied. Consequently increasing attention is being given to the promotion of more appropriate small scale industry in an attempt to encourage industrialisation within a more equitable environment. For it is believed that the observed characteristics of small scale industry - such as its labour intensity, its wide dispersion through the economy, its ability to use local resources otherwise wasted (e.g. labour) or neglected (e.g. local inputs) - will alleviate high levels of unemployment and income inequality and at the same time assist the growth in overall national income.

Partly because of the varying environments in which such industrialisation is being pursued, and partly because of the differing interest groups which have become involved in the process of development, the term "small-scale industry" has assumed many different meanings. Before proceeding with our discussion of small-scale industrialisation in Kenya and its relationship to international economic cooperation, it is therefore necessary to distinguish between these different definitions and to observe the characteristics of different types of small scale industry.

II. THE DEFINITION OF SMALL SCALE INDUSTRY AND ITS CHARACTERISTICS

Definitions of small scale industry

Depending upon the context of discussion, small scale industry has come to be defined in different ways. Four such definitions stand out in significance and while they are not necessarily mutually exclusive, there are many cases (as we shall try to point out) where the definitions do not overlap.

(a) Size

While the most common distinguishing characteristic used to define small scale industry is that of the number of employees, there is no agreement as to the cut-off point which is to be used. In noting that "no index of size is really satisfactory",

Staley and Morse in their classic study of small scale industry^{1/} opt to define it broadly as those firms employing less than 100 people. A similar classification is used by the Japanese census authorities. By contrast the Indian Census not only uses a smaller size grouping but also links this with the use of power. Hence the National Sample Surveys define small scale industries as those "establishments using power and employing less than 10 workers as well as those not using power and employing less than 20 workers"^{2/}.

Another size-grouping frequently used is that of total capital cost, and this is the one currently used in Kenya, where the operational definition used to define such industries is of enterprises with a total capital cost of less than Sh 5m (approximately \$667,000).

(b) Capital Intensity

Capital intensity (usually as measured by the ratio of fixed capital to labour) is probably the next most widely used operational definition of small scale industry. In general it is the relative labour intensity which is considered although in some cases an absolute figure is cited.^{3/} This definition of small scale arises from the general association between the size of enterprises and capital costs per workplace. But its drawbacks are clear since, as we shall see, there is no necessary association of this sort and particularly where modern small scale industry exists, enterprises with few workers may yet involve very high ratios of fixed capital per worker.

(c) Dispersion

A third defining characteristic usually used to describe the relative importance of small scale industry within a sector (rather than unidentifying individual small firms), is that of the concentration ratio - that is, in sectors where the concentration ratio is low, small scale industry makes a relatively significant contribution to value added, and it is this broad characteristic which is used by Staley and Morse in identifying the industrial sectors in which small scale industry predominates in the USA.^{4/}

1/ Modern Small Industry for Developing Countries, E Staley and R Morse, McGraw Hill, N. York, 1965. Quote is from p.2.

2/ National Sample Survey, Twenty-third Round, July 1968 - June 1969, 'Some Results on Small Scale Manufacture in Rural and Urban Areas, Government of India, Dept. of Statistics, Ministry of Planning, New Delhi, No. 200, p. 2.

3/ For example the £100-per-workplace figure cited by Dr. Schumacher and the Intermediate Technology Development Group in the early years.

4/ Op. cit., chapter 5. It should be noted that Staley and Morse calculate the share of industry value added in plants employing less than 100 workers rather than the concentration ratio which defines the share of industry value added contributed by the largest firms.

(d) Self-Reliance

More recently, small scale industry has come to be identified with appropriate technology which in some cases is defined in very particular terms. In general the criteria considered are those firms which incorporate reserve-mobilisation and satisfy broader social goals. In Tanzania, for example, the party directive on small scale industry defines it in the following way.

"A small scale unit is any unit whose control is within the capability of our ^{1/} people individually or collectively in terms of capital required or knowhow".^{1/}

These definitions each strike at a particular problem. The size criterion (that is the number of workers) focusses on employment; the capital intensity and the size criterion based on project size relate to the constraint of capital in providing employment; the dispersion criterion refers to the problems of regional concentration and oligopoly; and that of appropriate technology primarily concentrates on resource mobilisation and social organisation.

Each of these four definitions consequently has its disadvantages and these disadvantages are most pronounced in the definitions which specify a particular size as a cut-off point. Consider, for example, the following profile of the choice of technology in small scale glass plants.

TABLE 1: Choice of Technology in Small Scale Glass Production

	1 ton/day pot furnace	2.1/2 ton/day pot furnace	2.1/2 ton/day continuous furnace	5 ton/day continuous furnace	7.1/2 ton/day continuous furnace	10 Ton/day continuous furnace	15 ton/day continuous furnace
Installed Capital Cost (\$)	785,000	1,029,000	801,250	1,014,200	1,173,300	1,261,650	1,655,000
Employment	15	18	28	43	63	80	99
K/L	52,333	57,167	28,616	23,586	18,624	15,771	16,717

Source: Feasibility Study for Small Scale Glass Production, R. Kaplinsky and G. Pearson, 1978, mimeo.

Clearly the K/L ratio of these alternative glass plants is higher than the K/L ratio

^{1/} Cited in D. Phillips, Industrialisation in Tanzania: Small Scale Production, Decentralisation and a Multi-Technology Programme for Industrial Development, Economic Research Bureau Paper 76.5, University of Dar es Salaam, September 1976.

in most "small" and medium industries in a developing country.^{1/} Considered by size of the investment even the smallest alternative is too large to fit under the Kenyan umbrella of \$667,000.^{2/} Yet if a developing economy wants to engage in small scale glass production then the alternative to these techniques (each of which is relatively large compared to most "small" industry) is a 50 ton per day plant employing 200 people and costing \$14.5m. (with a K/L of \$72,500) which is considered to be the smallest feasible plant in developed countries. Moreover even the largest of these alternatives fits under the Staley and Morse rubric of "less than 100 employees", while none of them would have been considered "small scale" under the Indian definition. This emphasises our reservations with regard to size as the sole defining characteristic of "small scale".

It is best, therefore, when considering size criteria, to define small scale industry in relative terms, rather than in absolute ones. This is a point accepted by Staley and Morse who despite adopting the convenient operational definition of less than 100 employees, note that

"It is wise to recognise at the outset that there can be no single best or correct way to classify industry units as small or large. Different groupings are appropriate for different purposes and at different places and times".^{3/}

Observing the fundamental relativity of "small scale industry" makes it difficult to specify a determining definitional characteristic. While the empirical evidence at hand^{4/} suggests that compared to large-scale techniques, the efficient small scale counterparts are generally more labour-intensive, more decentralised, use more local inputs and more often meet the basic needs of the mass of the population, in some sectors even the smallest scale industries may be characterised by all of the unfortunate consequences of large scale industries found in other sectors. One policy

1/ For example the World Bank calculates the fixed assets per job in direct employment in India, Colombia, Mexico and the Philippines as

TABLE 2: Fixed Assets per job in Direct Employment for Selected Developing Countries.

	India (1965)	Colombia (1974)	Mexico (1970)	Philippines (1970)
Small	278	3,000	3,700	1,020
Medium	557	NA	9,500	2,850
Large	2,450	13,400	14,500	8,000

Source: Employment and Development of Small Enterprises: Sector Policy Paper, IBRD, Washington, 1978.

2/ It is of additional interest that in the case of these alternative small scale glass plants, the K/L ratio does not increase as the size of the plant (measured in number of employees) increases. This is because of scale economies which lead to underutilised equipment at low rates of output.

3/ Op. cit, pp 2-3

4/ See F. Stewart, Technology and Underdevelopment, Macmillan, 1978.

conclusion which emerges, therefore, is that if unfortunate patterns of development are to be avoided, the choice of sectors and products may be as important as the choice of production technology within any sector. But at the same time, it may be desirable to have an industrial strategy in which large-scale industry in some sectors coincides with small scale industries in other sectors. ^{1/}

The Characteristics of Small Scale Industry

In addition to these four commonly-used definitions of small scale industry, a set of additional characteristics arises from the distinction between modern and non-modern small industry. While it is generally true that the direction of technological progress in the developed countries has been towards increasing capital intensity and increasing scale, there are nevertheless sectors where relatively few employees work with very expensive fixed capital and the positive association between K/L and number of employees breaks down. Moreover in other sectors, what are small scale plants in developed countries where markets are large, become very large when transplanted to developing countries where markets are much smaller.^{2/} Therefore modern small industry, particularly that which produces products whose specifications are acceptable in developed country markets, may in the context of developing countries require high expenditure of fixed capital per workplace and may dominate local production to the exclusion of other plants.

Non-modern small industry comprises of a heterogeneous mixture of enterprises, ranging from well-organised factories operating in the formal sector to the essentially artisan-oriented very small enterprises of the informal sector, many of which only operate seasonally. For the purpose of the analysis which follows we shall distinguish between the non-modern formal enterprises and the non-modern informal ones. In general the former grouping is distinguished from modern small industry by the type of technology it uses which most often is based on techniques formerly used in developed countries but which are now obsolete there. Their profitable operation in developing countries arises from different factor prices, less demanding product specifications, the protection offered by distance and tariffs and their nearness to the final markets. Examples of such non-modern formal industry are numerous in developing countries, including the food processing and some metal-working industries.

At the other extreme lies the non-modern informal sector. "Informal" is perhaps an unfortunate word (since many of these enterprises are highly structured) and has

1/ An example of this is plastics, where the raw material is produced in Capital intensive large scale plants, while the downstream plastic-forming industries are often small scale and decentralised.

2/ For example, in the 1979-83 plan period Kenya proposes to establish a small scale sheet glass plant of 20,000 tons per annum, when the total imports of the products of such a plant were well below 20,000 tons in 1976.

been used in many contexts by referring, amongst other things, to their:

- very small size
- lack of regulation
- lack of permanent premises^{1/}
- ability to capitalise on lower factor prices
- products which more often are destined for low-income consumers
- low level of fixed capital per workplace
- the craft nature of their skills.

While it is difficult to settle upon any exclusive defining characteristic, since in part it depends upon the operating environment, in this analysis we are predominantly referring to the three latter characteristics in distinguishing between formal and informal non-modern industry - that is their 'low-income products', their low levels of fixed capital per worker and the craft nature of their skills.

In Table 3 below we list the characteristics of these three types of small industry which operate in developing countries. It can be seen that modern small industry^{2/} usually produces for high income consumers, often exporting some of their output to developed countries or acting as sub-contractors to large scale enterprises in the local economy. Their production technology is frequently imported and compares favourably to similar enterprises in developed countries, working with similar ratios of fixed capital per worker. Some of their inputs may also be imported and the skills of labour include both simple operators, working on machine-paced lines, and highly skilled technicians, some of which may be brought-in on a part-time basis. Management is specialised and makes every effort to take advantage of all possible government assistance which is often readily available given the "modern" nature of their activities. In some cases such modern small industry may well be foreign-owned.

Non-modern formal enterprises are generally less capital intensive and often in competition with other similar local firms. While the core technology may be imported there is scope for some peripheral processes to be locally manufactured, since the technology is less complex than modern plants, or because of their obsolescence, it may not even be available from developed countries. Output is less-often exported (since the products may not always meet-up to the specifications of developed-country consumers) but may nevertheless be destined for higher-income local consumers. In common

^{1/} Peter Kilby points out that it could probably be aptly entitled the "non-postal" sector. This criterion is being used in a major study of the informal sector currently being undertaken in Kenya. See "Nairobi's Informal Sector: A Reservoir of Dynamic Entrepreneurs or a Residual of Surplus Labour", W. J. House, Working Paper, Institute of Development Studies at the University of Nairobi, December 1978.

^{2/} Defined as small in relation to the choices available in a particular sector. They may thus well be relatively large scale and capital intensive when placed in the relatively large scale and capital intensive when placed in the context of a developing economy.

TABLE 3: Characteristics of Different Types of Small Scale Industry in a Typical Small Developing Country

Characteristics	Modern Small Scale Industry	Non Modern Small Scale Industry	
		Formal Sector	Informal Sector
Size	Small, relative to large scale	Absolutely small	Absolutely small
Technology	Imported	Often imported	Often local
Dispersion	Internationally, but seldom nationally	Internationally, but seldom locally	Internationally and locally
Intermediate and raw material inputs	Local and imported	Local and imported	Local
Products	High income	Usually high income	Low income
Sales	Some exports, often subcontracting for local industry	Mostly local, occasionally subcontracting for local industry	Local, little subcontracting for local industry
Management	Specialised	Specialised	Non-specialised
Government assistance	Often	Often	Seldom
Labour skills	Formal skills and unskilled	Unskilled and supervision	On the job training
Resource mobilisation	Little	Little	Often
Foreign investment	Occasionally	Occasionally	No

with relatively labour-intensive factories the production may well be labour-paced (rather than machine-paced) requiring experienced but not formally trained labour and intensive supervision. In a few cases such enterprises may make use of hitherto neglected resources (such as seasonal labour). Their relatively specialised management is able to draw upon the government assistance which is available.

It is the informal sector non-modern enterprises which most often satisfy the prevalent notions about small scale industry.^{1/} Very low levels of capital intensity are associated with great dispersion. Production is almost always for low-income local consumers (although in a few cases such as the handicraft sector there may be exports) and the technology is very often local. Product specifications and quality may be highly variable reflecting the extreme labour-intensity of their technology and the close personal contacts between producer and final consumer. Most strikingly such enterprises are able to tap neglected resources^{2/} but the unspecialised nature of their management and the informal skills of their labour force make it unlikely that they could take advantage of government assistance even if it were to be made available. For obvious reasons foreign investment is seldom involved.

III. THE POTENTIAL ROLE OF THE SMALL SCALE SECTOR

Many studies of small scale industries^{3/} discuss the specific characteristics of small enterprises, noting the general appropriateness of their activities given the factor endowments and problems of developing countries. In addition they note the existence of particular dynamic small enterprises and conclude that government policy should consequently stress the promotion of such small scale industry.

However, in our view such an approach, common as it is, illegitimately generalises from the specific (that is, particular dynamic enterprises) to the general (that is, the growth of small scale industry as a whole). For the limits to the expansion of the small scale sector are set by two factors - the technological imperative and the size and nature of the market.

The history of modern technological progress illustrates how in most sectors increasing capitalisation, associated with a greater scale of production, produces new, and more uniform products at lower unit costs than previous vintages of technology.

^{1/} It is worth noting that some observers distinguish within the informal sector between the 'intermediate sector' (by which they sometimes refer to more profitable enterprises and at other times more dynamic ones) and the 'community of the poor', that is the more itinerant, poorer participants. See House op. cit.

^{2/} Not just unused labour but also the waste products of the formal sector. Thus in Kenya such enterprises make sandals from old tyres, lamps from old tins, charcoal ovens from oil drums and bed springs from discarded motor-car tubes.

^{3/} For example, see W. House, op. cit., and the studies cited therein.

Of course the relative significance of this capital intensification and increases in scale varies between different sectors. But despite the fact that there remain some sectors (for example in the metal-working and food-processing industries) where the availability and perishability of raw materials and/or the proximity of a particular final market provide greater scope for decentralised production in small plants, it can be said in general that technological progress has increasingly made small industries unviable.

This, of course, is not to deny that there is in general a choice of technique. To the contrary within any particular investment there is almost always a choice of technique in which the degree of scale, capital intensity and the product specifications may differ. But this cannot be interpreted as defining the potential for a mass move to small scale enterprises (defined in the sense of numbers of employees, the size of K/L or the size of project costs) in any economy, since even the relatively small scale and labour intensive techniques available in a particular sector may be very large in scale when put in the context of a developing economy.

These technological developments have not only led to changes in production techniques but also in the nature of final output. While new industries have increasingly introduced income elastic products for high income consumers, the small industries using older and relatively unchanged technologies, have been left to produce inferior (in the economic sense) products for lower-income consumers. Thus the scope for the growth of the small scale industrial sector is not only limited by the technological imperatives noted above but also by the nature of the market. With the exception of high income consumers' demand for quaint handicrafts, most of small industry depends upon the demand of the relatively poor. As average incomes rise, or if income is so unequally distributed that poor people have little purchasing power, the market for small industry output may be very limited and the sector may be severely squeezed. Conversely the growth of this sector may be enhanced by the redistribution of income or the tapping of similar consuming markets abroad.

Any set of policies with regard to the expansion of the small scale industrial sector cannot therefore be sensibly pursued ^{1/} unless it is realised that such external constraints are placed upon its growth. And, further, small scale industry also plays a specific role in the articulation of the political economy ^{2/} and any significant

^{1/} We are excluding from this discussion the possibility of excluding all production by large scale plants (for example by decree) since this will place very high costs on the consumer.

^{2/} As Leys points out (in the Kenyan context, but nevertheless relevant to other developing countries) "What the 'informal sector' does is to provide the 'formal sector' with goods and services at a very low price, which makes possible the high profits in the formal sector ... providing cheap goods and services designed for the poverty life-styles of those whose work makes the 'formal' profitable, and enables them to live on their wages". C. Leys, *Underdevelopment in Kenya: The Political Economy of Neo-Colonialism*, Heinemann, London 1973, pp. 267-8.

change in its relative position may entail substantial changes in broader social, political and economic inter-relationships.^{1/}

These broad constraints placed upon the growth of small scale industry were specifically recognised by Staley and Morse who centre their analysis around those industries for which technological developments and market structure have evidently left scope for small industry (defined as those firms employing less than 100 workers which, as we have seen, may be 'small' in the American context, but may well include many 'large' enterprises in a small, developing economy). They distinguish eight types of industry for which it can be said that the potential for small scale industry exists, as is shown in Table 4.

TABLE 4: Sectors where small industries are viable in the USA.

Sector	Share of industry value added by plants employ- ing less than 100, 1958. %
<u>1. Locational Influences</u>	
Factories which process dispersed raw materials	12
Products with local markets and relatively high transfer costs	31
Service industries	14
<u>2. Process Influences</u>	
Separable manufacturing operations	14
Crafts or precision handwork	2
Simple assembly, mixing or finishing operations	4
<u>3. Market Influences</u>	
Differentiated products having low scale economies	14
Industries serving small total markets	9

Source: E, Staley and R. Morse, op. cit., Chapter five and p. 124.

IV. COMPARATIVE EVIDENCE OF THE SIZE OF SMALL SCALE SECTOR

Evidence of the size of small scale industry is almost always confined to the measurement of the number of employees. Moreover experience shows that enumeration of the very small scale sector is weak and most empirical studies emphasize that official censuses significantly, underestimate the number of very small scale 'informal sector' firms. Available statistics therefore almost entirely concentrate on the modern and non-modern formal sector.

^{1/} We shall pay greater attention to these at a later stage when discussing particular developments in the Kenyan economy particularly in its relationship to external economic cooperation.

The evidence which is available (see Table 5) is inconclusive. It shows, as one would expect, that the proportion of value added by small enterprises is much lower than their proportion of the total number of enterprises, as well as of their share of total employment. It also appears as if in some countries such as Israel, Iran and Japan, small scale industry accounts for a relatively large share of total output and value added. And finally there appears to be a secular trend towards a decrease in the relative importance of small industry.^{1/}

^{1/} Support for this observation also comes from a glance at Chinese statistics where despite official recognition of the importance of stressing small industry, the share of this sector (defined as "non-modern") in total industrial output fell from 43% in 1950 to 25% in 1958. See D. Phillips, op. cit. p.65.

TABLE 5: Relative Importance of Different Size Groupings of Small Scale Industry in Different Countries.

		% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added	
		<u>0-10 Employees</u>				<u>0-20 Employees</u>				<u>0-50 Employees</u>				<u>0-100 Employees</u>				
Nigeria	1972	97	57.8		16.9					99.5	64.5		21.8					
Iran	1970					99	76.4		34.8	99.6	80.1		43.5					
Zambia	1973					39.3	4.6			67	17.2		15					
Tunisia	1971					55	7		5.9	78	19		16.3					
Argentina	1954													98	52	39		
USA	1958													91	27			23
UK	1961													92	26			
W. Germany	1953													89	27	23		
N. Zealand	1959/60													97	62			55
Japan	1959/60	76	20	7.8	5.2									98	56			34
		<u>5-10 Employees</u>				<u>5-20 Employees</u>				<u>5-50 Employees</u>				<u>5-100 Employees</u>				
S. Korea	1971	55.4	9.5	3.3	3.7	77.5	17.6	3.5	3.6	89.9	27.9	5.6	5.5	94.1	35.9	6.8	6.9	
Israel	1970					70.9	17.2		11.5	87.4	32.1		24.1					
Colombia	1919					70.7	12.8		5.1	82.6	27.9		14.2					
						<u>10-20 Employees</u>				<u>10-50 Employees</u>				<u>10-100 Employees</u>				
Tanzania	1966									61.6	18	19		79	34	36		
Tanzania	1971									55.7	12	14		74.5	23	29		
Singapore	1971					36.2	6.4		4.6	71.1	20.3		14.1					
Trinidad and Tobago	1970									60.1	17.6		14.4					
Japan	1955													22	40	31		30
Japan	1965													25	37	26.5		28.6
						<u>0-20 Workers</u>				<u>20-49 Workers</u>				<u>20-100 Workers</u>				
Philippines	1960						55.3				15.8				27			
S. Korea	1957										30.5				49.9			
S. Korea	1963										22				36.4			
Taiwan	1961						44.9				21.7				33.9			
Hong Kong	1960						8				15.7				29.5			
Pakistan	1957						85.2				10.9				19.1			

		% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added	% of all establishments	% of all employees	% of all output	% of all value-added
						<u>0-20 Workers</u>				<u>20-49 Workers</u>				<u>20-100 Workers</u>			
Japan	1919																
Japan	1940																
Japan	1952																
Japan	1958																
India	1954																
Sri Lanka	1952																

Sources: E. Staley and R. Morse, Modern Small Industry for Developing Countries, McGraw Hill, New York 1963;
S. Ishikawa, Economic Development in Asian Perspective, Hitotsubashi University Economic Series 8, Tokyo 1967;
IBRD and SIDA, 'Financing the Development of Small Scale Industries', Bank Staff Working Paper No. 194, November 1974;
Private Communication from G. Shepherd;
D. Phillips, Industrialisation in Tanzania;
Small Scale Production, Decentralisation and a Multi-Technology Programme for Industrial Development, Economic Research Bureau Paper M6.5, University of Dar es Salaam, September 1976;
S. Korea - Base Line Data, Georgia Institute of Technology, Atlanta, 1975.

Considering small scale industry in terms of the amount of fixed capital per worker, we have already seen (see Table 2, above) that the K/L ratio in small industries in four countries was significantly lower than that in large industries. The detailed evidence which exists for Japan (see Table 6 below) confirms this trend although it is of interest to note that there is little variation in the K/L ratio of firms until they employ more than fifty workers.

TABLE 6: K/L Ratios by Size of Enterprise in Japan (1959)

Size of enterprise (employees)	Fixed capital per worker (7,000)
1-3	93
4-9	97
10-19	90
20-29	97
30-49	102
50-99	136
100-199	165
200-299	233
300-499	345
500-999	447
1,000	767
Average	324

Source: Choice of Techniques: The Experience of Japan and its implications for Underdeveloped Countries, S. Okita, Industrialisation and Productivity Bulletin.

Comparative evidence on the dispersion of industry is difficult to obtain although the evidence which exists for India (see Table 7 overleaf) is not only interesting because it shows the extent to which small industry is dispersed in the rural areas, but also because it gives an idea of its sectoral distribution and the astonishing number (over 8 million) of small enterprises.

The measurement of small industries judged by our fourth defining characteristic (that is, self-reliance) is of course almost impossible to undertake but it must be considered that many of the very small enterprises enumerated in Tables 5-7 would fulfill these criteria.

TABLE 7: Sectoral Breakdown and Magnitude of Small Scale Industry in India, 1968-9

<u>Sector</u>	<u>Rural</u>		<u>Urban</u>		<u>Total</u>	
	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Food, except beverages	940,885	14.3	97,068	4.8	1,037,953	12.1
Beverages	522,946	8	173,939	8.7	696,885	8.1
Tobacco	538,115	8.2	234,746	11.7	772,861	9
Textiles	1,096,260	17	398,658	19.9	1,494,018	17.4
Manufacture and repair of footwear	405,692	6.2	81,989	4.1	487,681	5.7
Wearing apparel except footwear and made-up textiles	495,543	7.5	279,755	14	775,298	9
Wood and cork	777,306	11.8	101,306	5.1	878,612	10.3
Furniture and fixtures	222,986	3.4	88,535	4.4	311,521	3.6
Paper and paper products	2,298	.03	7,558	.4	9,856	.1
Printing, publishing and allied industries	50	.001	13,510	.7	13,560	.2
Leather and leather products, except footwear and wearing apparel	72,641	1.1	8,735	.4	81,376	1
Rubber products	6,871	.1	3,836	.2	10,707	.1
Chemical and chemical products	21,720	.3	34,712	1.7	56,432	.7
Products of petroleum and coal	594	.01	276	.01	870	.01
Non-metallic mineral products, except of petroleum and coal	563,872	8.6	66,836	3.3	630,708	7.4
Basic metal industries	19,845	.3	11,424	.6	31,269	.4
Metal products except machinery and transport	311,322	4.7	103,312	5.2	414,634	4.8
Machinery, except electrical	163,544	2.5	19,065	1	182,609	2.1
Electrical machinery, apparatus, appliances and supplies	1,391	.02	10,598	.5	11,989	.1
Transport equipment	52,837	.8	64,840	3.2	117,677	1.4
Miscellaneous manufacturing	352,421	5.4	204,422	10.2	556,843	6.5
TOTAL	6,569,494	100	2,005,170	100	8,574,664	100

Note: Small industry defined as less than 10 workers working with power, or less than 20 workers working with power.

Source: Calculated from National Sample Survey, Twenty Third Round, July 1968 - June 1969 Number 218, National Sample Survey Organisation, Department of Statistics, Ministry of Planning, Government of India, Delhi.

V. THE ROLE OF THE SMALL SCALE SECTOR IN KENYA

Unfortunately there is little evidence of indigenous industry in the pre-colonial period, partly because of the absence of written records and partly because it is unlikely that indigenous industry was diversified or extensively capitalised. The evidence which exists for neighbouring Tanganyika in pre-colonial times ^{1/} suggests that ironsmelting and the manufacture of rudimentary implements and weapons, basketwork, pottery, salt manufacture, leather tanning and some weaving were all undertaken by specialised craftsmen. Nineteenth century German travellers in Tanganyika compared these with the crafts and technology of pre-industrial Germany.

Because of their rudimentary nature, these indigenous industries were effectively crushed by the quality and cheapness of imported commodities. The new small industries which developed in Kenya were almost entirely begun by European and Asian immigrants, confining themselves to food processing, sawmills and repair workshops. A few of these enterprises ^{2/} subsequently grew into large scale units, but many - particularly the metal-working and engineering workshops - stabilised themselves at a low scale so that only a limited number of today's small enterprises can trace their roots back fifty years or more.

But the origins of indigenous small industry ^{3/} can really be traced to the post-independence period when the government expanded an existing parastatal with the specific aim of promoting African entrepreneurs. This parastatal - the Industrial and Commercial Development Corporation - was divided into two branches, that dealing with large firms and that dealing with small firms. The small-scale section was subdivided into manufacturing property and commercial sections. At the same time a new institution - Kenya Industrial Estates - was established with the aim of providing workshops and extension for modern small industry in the urban areas, and a number of Rural Industrial Development centres were also built to provide machinery (which could be rented), bulk purchasing and extension services for rural industries.

The pattern of small scale industry's development in Kenya is similar to that of other countries (as shown in Table 5 above) in that its contribution to value-added is low with firms employing less than fifty workers accounting for 37.5% of all enterprises, but employing only 18.8% of all employees and contributing only 15.3% of total industrial output and 14% of industrial value added. (See Tables 8 and 9 below). Moreover as in other countries the relative importance of this sector seems to have

^{1/} See D. Phillips, op. cit. pp 3-4.

^{2/} For example one of the largest industrial houses in the food industry, the House of Manji, was begun as a small scale plant soon after World War II.

^{3/} Given political developments in Kenya it is unlikely that non-indigenously owned small enterprises - except perhaps some of these classified as 'modern', with some degree of exporting - will have much future.

TABLE 8: Firm Size Groupings and their Share of Employment and Number of Establishments

	% of all Establishments	% of all Employees	% of all Establishments	% of all Employees	% of all Establishments	% of all Employees	% of all Establishments	% of all Employees
1966	65.3 ^(a)	6.5	78.1 ^(a)	11.6	90.2	22.5	9.8	77.5
1969	56.7 ^(a)	7.6	70.9 ^(a)	13.9	85.6	28.1	14.4	71.9
1972	23.5	3.9	30.1	8.1	37.5	18.8	8.9	81.2
1975	17.6	2.8	24.7	6.5	33.8	17.3	11.0	82.7
1976	18.7	2.7	26.4	6.4	35.6	16.5	11.9	83.5

(a) In 1966 and 1969, includes establishments with no employees (i.e. only owners worked). Since this category was excluded in other years some percentages do not add up to 100.

Source: Statistical Abstracts, Central Bureau of Statistics, Ministry of Finance and Planning, Nairobi.

TABLE 9: Contribution of Small Industry to Value Added and Gross Output and Relative Use of Labour and Fuel

	1961			1963			1972			
	5-19	5-49	750	5-19	5-49	750	1-4	1-19	1-49	50
Share of total output (%)	8.5	19.8	80.3	8.9	21.9	78.1	1.8	6.4	15.3	84.7
Share of total labour costs (%)							1.8	7.3	17.1	82.9
Share of value added (%)	7.5	18.5	81.5	7.8	19.6	80.4	1.7	6.1	14	86
Share of fuel consumption ^(a) (%)								2.4 ^(a)	6.1	93.9

(a) Excludes 0-5 size category.

Source: Censuses of Industrial Production, 1963 and 1972, Central Bureau of Statistics, Ministry of Finance and Planning, Nairobi.

declined between 1961 and 1972. Compared to other countries, however, such as Japan Israel and S. Korea, the contribution of small scale industry is relatively small.

Comparison of the sectoral and regional distribution of small industries which were given loans by the ICDC (see Table 10 below) with the distribution of small industries in India (see Table 7 above) illustrates the following points:-

- that except for grain milling, jaggery manufacture, sawmilling and cement block manufacture, small industry tends to be concentrated in the capital city, Nairobi.^{1/}
- The modest range of Kenyan small scale industries compared to those of India.
- The small absolute numbers of such enterprises which while unsurprising given Kenya's smaller population, provides a smaller pool for future growth and innovation.

The characteristics of the small scale industrial sector discussed above predominately reflects the nature of formal sector (both modern and non-modern) enterprises. However partly because of the impact of the ILO Report ^{2/} and the emphasis it placed on the informal sector, a number of studies have now been undertaken which give some idea of the nature of this sector in Kenya. Broadly speaking three features of the informal sector emerge from these studies.

(a) Their Modest Nature

A major study recently undertaken of the informal sector in Nairobi ^{3/} visited 577 enterprises. The sectoral distribution of these enterprises is shown in Table 11 below from which it can be seen that the range of activities is very narrow. Only in the case of metal working where a few enterprises represent (very) embryonic capital goods manufacturers, is there any evidence of enterprises which have technological capabilities of note. Most other enterprises make 'inferior' goods for the working poor.

Similar trends emerge from two other studies. One surveyed enterprises assisted by the Rural Industrial Development Centres in 1975 and found that two-thirds of all enterprises employed less than 10 people, with a modal size of 3-5 employees. ^{4/}

^{1/} Moreover much of the other industry is in urban areas in the various regions.

^{2/} Employment, Incomes and Equality, ILO, Geneva, 1973.

^{3/} W. House, op. cit.

^{4/} Chapter 11 of the Second Overall Evaluation of the Special Rural Development Programme, Occasional Paper No. 12, Institute for Development Studies at the University of Nairobi, 1975.

TABLE 10: Loans to Small Scale Industry by Industrial and Commercial Development Corporation

Product	1961-1975							
	Nairobi		Rest of Kenya		Total		Share of Total Loans (%) (by value)	Average Size of Loans (\$)
	No	%	No	%	No	%		
Maize milling	0	0	116	38	116	30.7	7.4	2,462
Bakery	6	8.5	10	3.3	16	4.2	10.6	25,758
Jaggery	0	0	5	1.6	5	1.3	2.5	19,125
Wood working	6	8.5	20	6.5	26	6.9	4.9	7,540
Car repair and sales	5	7	24	7.8	29	7.7	9.8	13,580
Miscellaneous Services (a)	13	18	37	12.1	50	13.2	11.2	11,747
Miscellaneous Manufacture (b)	17	9.9	33	10.8	40	10.6	13	15,243
Quarry Cement blocks	0	0	20	6.5	20	5.3	10.9	22,257
Printing, publishing	17	24	4	1.3	21	5.6	17.7	32,702
Building and electrical Contracting	3	4.2	2	.7	5	1.3	0.9	7,125
Tailoring	9	12.7	7	2.3	16	4.2	31.	7,059
Metal working	3	4.2	12	3.9	15	4	2.5	6,550
Leather and shoes	2	2.8	5	1.6	7	1.9	0.5	2,589
Saw Mills	0	0	12	3.9	12	3.2	4.9	15,865
TOTAL	71	100	307	100	378	100		10,876

(a) Cinemas (4), bowling alley (1), music recording (3), dry cleaning (12), hair-dressing (1), fish and chips (3), photography (5), tour operator (1), transport (1), material decorating (1), butcher (2), hotel (1), typewriter servicing (1).

(b) Assembly of refrigerators (1), mixing animal feeds (2), tyre retreading (4), sugar can juice (2) salt grinding and packing (2), galvanising of iron (2), shoe polishing (1), soap manufacture (1), fish processing (1), bicycle repairs (2), Sisal decorticating (2), sisal brushes (1), fishing (1), agricultural implements (1), mixing of milk powder (1), battery assembly (1), mixing of spices and baking powder (1), machine building (1) cosmetics (1), armature rewinding (1).

Source: An analysis of ICDC small industrial loan commitments 1961-1975, R. Kayslinsky, Working Paper 251, Institute.

TABLE 11: Survey of Informal Sector Enterprises (a) in Nairobi, 1977

<u>Manufacturing</u>	No.	%
Tailors	75	13
Footwear	38	6.6
Furniture	93	16
Metal goods	47	8.2
all Manufacturing	285	49.4
<u>Trade</u>		
Retail	28	4.9
Restaurants	34	5.9
Charcoal	25	4.3
All trade	121	21
<u>Services</u>		
Footwear repair	34	5.9
Vehicle repair	43	7.5
Clothes repair	36	6.2
Barbers	15	2.6
Shoeshine	13	2.3
Miscellaneous repair	13	2.3
All services	164	28.4
Transport	7	1.2
<u>Total</u>	577	100

(a) Defined as those enterprises without permanent accommodation.

Source: W. House, op. cit.

The 29 metal-working enterprises in Embu District made the following limited range of products - water tanks and containers (23) charcoal ovens (21) wash basins (21) buckets (11) bicycle repairs (9), steel windows (7) watering cans (2) dustbins (2) water heaters (1) panel beating (1) brooders (1) ox-carts (1) chairs (1) and gates (1). A second study ^{1/} found similar trends and focussed in particular upon the 'inferior goods' nature of their output concluding that

"the products offered by rural small scale industry in Kenya are not the sort that would sell readily in the markets of London, Tokyo or New York, nor to high income consumers in Kenya" (p. 23).

(b) Their Appropriateness

All three studies cited above noted the wide dispersion of these informal sector enterprises. In addition their K/L ratios were much lower than those in the formal sector. (In Child's sample, it was \$1,667; House estimated that the K/L ratio in his manufacturing sample was 11 times less than that of formal sector manufacturing enterprises).

(c) Their Profitability

One of the more surprising results of these and other studies was the relative profitability of informal sector enterprises. Child found an average profitability of 75% p.a., while the incomes measured by House suggested that whereas the legal monthly wage was \$44, the average income of heads of enterprises in his sample was \$148 in manufacturing, \$200 in trade and \$118 in services. In another study conducted on the bread industry ^{2/} it was also clear that the rate of profit in small enterprises in this sector substantially exceeded that of large enterprises.

In summary, then, it is evident that as in many other countries, the share of the small scale manufacturing sector appears to be declining in Kenya. The range of formal sector small industries appears limited and the absolute number of such enterprises is still fairly small, particularly compared to other developing countries such as India and S. Korea.^{3/} The small-scale informal sector appears confined to the production of inferior goods for the poorer peasantry and proletariat and as a consequence its future is not only linked to the growth of the formal sector, but if per capita incomes increase, consumers may well switch their demand to formal sector products.

^{1/} Employment, Technology and Growth - The Role of the Inter-mediate Sector in Kenya, F. C. Child, Occasional Paper No. 19, Institute for Development Studies at the University of Nairobi, 1976.

^{2/} Appropriate Technology in a UDC: The Bread Industry in Kenya, R. Kapinsky, 1977, mimeo.

^{3/} In S. Korea in 1971 there were apparently over 23,000 registered firms employing less than 100 workers. We have already seen in Table 7 above that there were over 8 million small firms in India in 1968-9.

VI. PROBLEMS OF THE SMALL SCALE SECTOR IN KENYA

While, as we have seen, the overall growth of the small scale manufacturing sector is circumscribed by technological progress and the size of the market, there are a number of specific factors which have acted to blunt the expansion of this sector in Kenya. If any particular factor is singled out as contributing to this obstruction of the small scale sector, it is the openness of the Kenyan economy and the political, social and economic factors associated with this openness. We can detail this conclusion by discussing a number of particular observations in greater detail.

(a) Government Policy

One of the main policies of the newly independent government was the maintenance of Kenya's existing links with the outside world.^{1/} Partly because of the existence of a large group of British settlers the pattern at independence was one of heavy penetration by foreign investment, particularly British. Every attempt was made to maintain these links and to encourage the continued flow of new foreign investment. In later years such new investment has increasingly been linked to joint ventures with the State.

As a consequence, much attention has been given to the success of such foreign ventures and in situations of conflict, the interests of the small scale manufacturing sector have often been sacrificed to ensure the success of the large scale sector. Thus during an acute government budgetary crisis in 1975, the ICDC coped with a cash shortage by stopping all funds to the small loans scheme in order to continue the flow of funds for large scale joint ventures with foreign firms.

The sacrifice of the interests of the small scale sector has filtered through even when foreign investment is not involved. Thus in the bread industry, despite the proven viability and greater profitability of small scale bakeries using local technology, the Price Commission set the price of bread at a rate which not only allowed the relatively unprofitable large bakeries to survive the competition of small bakeries (which wished to lower prices), but also to deliver to rural areas thus undermining small rural bakeries due to their greater "product strength"^{2/}. A similar policy ensued with regard to maize milling where instead of phasing - in four medium-sized 25,000 tons p.a. plants in different parts of the country, the Government opted for one large 100,000 ton p.a. mill, operating at excess capacity in the first years. Other examples can be readily provided (e.g. sugar, biscuits, pineapple canning etc.) to illustrate the prevalent Government favouring of large-scale over small-scale industry. It is important to note the links between this bias, the quest for 'modernity' in technical choice and the desire to encourage foreign investment since

^{1/} See c. Leys, op. cit.

^{2/} See R. Kaplinsky, 1977, op.cit.

'modern industries' are usually large in scale (particularly in the context of a small developing country such as Kenya) and are frequently associated with foreign investment.

(b) Direct Foreign Investment

We have already seen that direct foreign investment has played an important role in the Kenyan economy. It is of additional interest to note the direction of investment which has almost entirely come from developed economies ^{1/}. Such foreign investors, as Langdon points out in his study of foreign investment in Kenya ^{2/}, came with a readily established portfolio of developed-country products. Once these products are specified in such specific ways the potential for technical choice is already limited usually in favour of large scale and inappropriate developed country techniques. Had this foreign-investment come from a developing country it is possible that these fixes between products and production technologies would have led to the emergence of relatively smaller and more appropriate industrial enterprises. ^{3/} Moreover, even where it might be possible to use local inputs, the vertical organisation of many foreign firms, coupled with their policies of global sourcing, inhibits the use of local inputs, some of which may have been produced by small scale industry.

(c) Demand Structures

A disturbing and prevalent attitude exists amongst consumers in Kenya that modern-sector 'foreign type' goods are inherently superior to those of the non-modern sector. We have already seen how rural bakeries are adversely affected by consumer preference for formal sector bread despite the fact that the rural products are often superior (in freshness and other qualities regularly used as yardsticks in the industry) to that of the larger, urban bakeries. Such a pattern is extremely widespread and is reflected in the advertising industry, where most advertisers use the "Unilever philosophy" - 'stick it in at the top of the market and let it sink down'. A number of instances are available of products marketed specifically for low-income African consumers which had consequently failed to catch the imagination of the public. ^{4/}

^{1/} Figures collected by the OECD suggested that in the mid 1960s 78.8% of all foreign investment was British and 8.7% American.

^{2/} S. Langdon, *The Multinational Corporation in the Kenyan Political Economy*, in *Readings on the Multinational Corporation in Kenya*, R. Kaplinsky (ed), Oxford University Press, Nairobi, 1978.

^{3/} The transfer of open-pan-sulphate sugar technology from India albeit outside the context of foreign investment, is such an example.

^{4/} See *Inappropriate Products and Techniques in UDC's: The Case of Breakfast Foods in Kenya*, R. Kaplinsky, Working Paper No. 335, Institute for Development Studies and the University of Nairobi, April 1978.

Such inappropriate consumption patterns are reinforced by advertising which has the effect of switching demand from the products of small-scale industry to those of large scale industry. Thus whereas there was no advertising of traditional breakfast foods produced by small scale firms, advertising expenditure of large-scale industry products was as follows:

TABLE 12: ADVERTISING EXPENDITURE IN DIFFERENT MEDIA (\$)

	<u>Press</u>	<u>Radio</u>	<u>T.V.</u>	<u>Cinema</u>	<u>Total</u>
Post Toasties	3,333	3,373	0	0	6,705
Weetabix	20,930	21,728	8,048	11,968	62,693
Weetaflakes	6,385	5,870	0	0	12,255
Maize flours (roller mills)	9,223	17,485	0	11,430	38,590
Uji Plus (a)	0	0	1,718	4,725	6,443

(a) An instant food produced by the Unilever subsidiary.

Source: R. Kaplinsky, 1978, op. cit.

It is also of interest to note the extent to which large scale foreign investors dominate the advertising industry. Thus in 1976, all of the top ten advertising companies were subsidiaries of foreign firms, and all of the ten most advertised products and 86 of the top 100 most advertised products were products of foreign owned subsidiaries.^{1/}

(d) The direction of trade

Linked with the nature of foreign investment in Kenya and the structure of taste patterns is a heavy concentration of trade with developed countries. Thus, as can be seen from Table 12 below, although the share of exports going to other developing countries was on a rising trend between 1965 and 1971, it had fallen below 50% in the period 1972-5 (and was almost certainly even lower in 1976-8 due to the coffee boom). Similarly the share of imports coming from other developing countries has been rising but nevertheless still only accounted for about one-third of total imports in 1975.

TABLE 13: Share of Kenya's Trade with Developing Countries, 1965-79

	<u>1965</u>	<u>1966</u>	<u>1967</u>	<u>1968</u>	<u>1969</u>	<u>1970</u>	<u>1971</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Exports to LDC's as % of total	22.6	27.6	34.1	54.6	55.8	56.1	57.6	43.7	44.7	44.9	46.1
Imports from LDC's as % of total	21.7	21	19.4	20.3	29.3	25.8	24.3	25.1	23.9	31.5	34.4

Source: Trade Among Developing Countries, 1964-1975: A Statistical Handbook, Research Centre for Co-operation with Developing Countries, Ljubljana, 1977.

^{1/} See Kenya Media Advertising Review 1976, Corcoran and Tyrrell Ltd., Nbi.

The significance of this concentration of trade with developed countries lies in the fact that with processed primary products and manufactured exports the specific and exacting product specifications of developed country markets often necessitate the use of large scale and inappropriate production technologies. In the case of imports, capital goods obtained from developed countries, although producing output which meets developed-country taste patterns in Kenya, may well be less appropriate than alternative equipment obtained from developing countries.

(e) Income Inequalities

Clearly these demand structures which provide a market for the output produced by large scale and inappropriate techniques reflect an unequal pattern of income distribution. In fact according to various studies Kenya appears to possess one of the most unequal distribution of incomes - in one study, out of 25 countries examined, Kenya was the fifth most unequal with only Rhodesia in the African continent being more unequal.^{1/} While such income inequalities do have indigenous roots their sharpness in Kenya can be directly traced to the colonial heritage (including the presence of numerous settlers) and the reinforcements of these inequalities by post-independence policies designed to maintain the inflow of foreign investment into Kenya.

(f) Skills

One final specific factor obstructing the advance of small scale industry in Kenya is the lack of available indigenous skilled labour. In some cases this has necessitated the choice of inappropriate technology which very often substitutes highly skilled labour (which can be imported on contract) and unskilled labour for the semi-skilled labour and supervision required by man-paced labour-intensive processes. But the absence of skills has also affected the price charged by skilled labour and a recent Kenyan ministerial mission to India noted that whereas highly skilled university graduates worked for \$200 a month in India, similar manpower in Kenya cost up to \$1,600. Not only did this manpower shortage effect the profitability of small firms, but because skilled manpower could earn such high incomes in large scale industry, the pool of entrepreneurs for small scale industry was consequently relatively poorly trained. Compounding this is Kenya's relatively short industrial experience and the poor endowment of informally trained labour.^{2/}

1/ For a review of trends in the distribution of income in Kenya between 1966 and 1976 see chapter 3 in *Ownership and Equity in Kenya*, R. Kaplinsky and others, NCKK Nairobi, forthcoming.

2/ One of the more common factors observed with regard to the informal sector in Kenya is that the more successful enterprises were run by entrepreneurs who had previously worked in the formal sector. See, for example, W. House, op.cit.

VII: FUTURE EXPANSION OF SMALL SCALE INDUSTRY IN KENYA IN THE CONTEXT OF INTERNATIONAL ECONOMIC COOPERATION

We have seen in section III that despite the profitability and appropriateness of small scale industry and the dynamism of particular small enterprises, expansion of small industry is circumscribed by the technical progress in each sector and the nature and extent of the market. Thus, for example, it is difficult to envisage a viable role for a Kenyan small scale motor car industry (with total annual consumption of about 12,000 units) without substantial costs to the consumer. Nevertheless despite these extraneous constraints on the growth of small industry, there remain some strategies which can be implemented which would increase its role relative to that of large scale industry.

In section VI we noted that in the past the progress of small scale industry was hindered by six factors - government policies, direct foreign investment, taste patterns, the structure of trade, the unequal distribution of income and the availability of skills. With the exception of skill availability, fundamental changes in relation to any one of the other five factors would inevitably have an impact on the other four. Thus it would be difficult to reorientate trade away from developed countries without changing the structure of demand; since most foreign subsidiaries import intermediates from their parent companies, such a restructuring of trade would inevitably affect foreign investment adversely; and the new distribution of income which is required to re-orient taste patterns would make Kenya less attractive to foreign investment which anyway plays a role in maintaining the existing pattern of inequality. So although there exists a package of strategies for the encouragement of small scale industries, these would fundamentally alter Kenya's existing relationship with the outside world. Such a restructuring would require very far-reaching political, social and economic changes within Kenya and this is, at the present time, difficult to envisage. Moreover because so much of global technical progress is generated with multinational corporations based in developed countries, there would be clear costs to the Kenyan economy from such a fundamental altering of external relations without substituting other sources of technical change.

More incremental changes are however also possible and it is encouraging to note that some are now being pursued. Thus in the forthcoming five year plan great emphasis is being placed upon the expansion of the small scale sector. Kenya Industrial Estates is to undertake a significant expansion programme, with estates to be set up in each of Kenya's thirty-three districts. Additional funds (totalling almost \$ 7m) are to be set aside to encourage small enterprises and this will be backed by expanded training and extension schemes. On the demand side it is proposed that tendering be decentralised to encourage local production, and product development - especially of agricultural implements - is to be stressed. Attention is also being paid to building and health standards to ensure that they are appropriate and do not stifle production by small scale industry. However it is notable that none of these proposals relate at all to broader problems such as income distribution, taste patterns or the direction of international trade.

The genesis of this new policy is interesting in that it raises the relationship of international aid to small industries. In earlier years Kenyan Industrial Estates was funded partly by foreign donors, particularly the German and Danish Governments. In recent years however the World Bank has become increasingly interested in the expansion of small scale industry and after surveying the Kenyan economy offered to "take on" Kenya Industrial Estates, providing \$ 1m in the initial stages. However this was conditional upon a number of policy changes, two of which were that the loans offered to small industry by Kenya Industrial Estates should no longer be concessionary (but should, at 10-11% be nearer to market rates) and that instead of entrepreneurs being expected to provide working capital alone, they should also provide between 15% and 20% of total cost (including working capital). The emphasis has thus been switched from a developmental to a commercial role for Kenya Industrial Estates.

Aside from the observation that one would like to make about the validity of this evaluation by the Bank, the interesting principle, which it raises is that these proposals faced very strong opposition both from within Kenya Industrial Estates itself and from other Ministries. The external donor agency, however, was able to exert its own policy over that of the specialised local agency by virtue of providing a loan and this is open to question not just in relation to the specifics of this case (where our judgement supports the views of Kenya Industrial Estates) but also as a point of principle.

We have centred our analysis around the limits to small scale industry imposed by the direction of technological progress and the extent of the market. Insofar as the expansion of small scale industry in Kenya is limited by the extent of the market we have already discussed policies which might be undertaken, almost all of which require changes in Kenya's relations with the world economy. It remains, therefore, to comment upon policies which might be undertaken to circumvent the technological obstacles. The first option of course is to expand and streamline Kenya's own technological capabilities and steps have now been taken to improve these.^{1/} We shall confine ourselves here with a brief observation on the relationships between technical progress in Kenya and the global economy.

At present, partly because of the domination of technological progress by developed countries, and partly because of Kenya's policy of encouraging foreign investment, large scale and inappropriate technologies dominate in the Kenyan economy. But other developing countries are also generating new technologies and because of the context within which these technologies are developed, they are often more appropriate and smaller in scale. The transfer of such technology has already begun in the agricultural sector but there is clearly scope for the transfer of industrial technology as well. Thus

^{1/} Hitherto Kenya's Science and Technology System has had little effective links with local industry. For an analysis of these relations to the food processing industry, see R. Kaplinsky 'A Country Study: Food Processing in Kenya', in Readings on the Food Processing Industry in Developing Countries, C. Baron (ed.) Pergamon, forthcoming.

Hindustan Machine Tools is establishing a machine tool factory in Kenya and, increasingly attention is being paid to other developing countries such as India ^{1/}, as a source of capital goods.

VIII: SMALL SCALE INDUSTRIES IN KENYAN-TYPE UDC'S: SOME SUGGESTIONS FOR EXTERNAL COOPERATION

It has been suggested that three broad strategies of industrialisation may be pursued by developing countries:

- "(a) Those oriented towards export markets and acceptance of the international division of labour, as determined by the operation of free markets and free trade;
- (b) Those featuring a planned attempt, from a national perspective, to build up an independent industrial structure with emphasis on capital goods production, though perhaps starting with a process of import substitution;
- (c) Those which are essentially inward-looking, aimed at expanding the internal market for industrial products of mass consumption, meeting directly the needs and using the capacities of population majorities."^{2/}

In terms of this categorisation the Kenyan economy fits most closely into the first group - an open economy, trying to make the transition from an import substituting to an export promoting strategy of industrialisation.

However, it is clear that the open economies of the developing world are themselves differentiated between the newly industrialising economies (such as S. Korea, Taiwan, and Singapore) and those whose industrialisation is at a more embryonic stage. Kenya, as most other independent African economies, fits into the latter group. Hence the conclusions we draw in relation to external economic cooperation, whilst perhaps also of relevance to countries in the two other categories of developing economies, are particularly relevant to economies of a similar type and stage of development as Kenya.

Before proceeding to these more detailed observations, it is worth noting the consequences of development strategies of this type. Most of these open economies show extreme degrees of inequality. Because of the dominance of foreign investment and large scale industry, industrial development is heavily concentrated in the capital cities and

^{1/} A recent ministerial mission to a small industry trade fair in India was struck by the very wide range of small industries available. Small industries were visited producing industrial valves, hand tools, agricultural implements, plastic goods, bicycles, lathes and motor components which could readily be introduced into Kenya.

^{2/} Note on the Joint Study on International Industrial Cooperation, Addendum 2, Fourth Progress Report on Preparatory Arrangements for the Third General Conference of UNIDO, ID/B/C.3/71 add 2, November 1978, pp. 6-7

other large towns. The availability of high income, branded goods (either imported or produced locally) is very often contracted with visible signs of inequality and poverty. Growing unemployment and landlessness give rise to significant increases in social tensions, with crime and other social pathologies increasing at disproportionate rates.^{1/}

While in some cases (such as S. Korea, Taiwan and Singapore) these developments have been counter-weighted by very rapid increases in per capita GNP, the less successful open developing economies (of the Kenyan type) have faced:

- stagnating or slowly-growing per capita incomes, heavily influenced by fluctuations in commodity prices.
- recurrent balance of payments deficits, once again dominated by commodity-price fluctuations.
- unchanged economic structures, with little evidence of growing exports of manufactured goods. For example, the case of Kenya, see Table 13 below.

TABLE 14: Selected Economic Indicators

	<u>1964</u>	<u>1972</u>	<u>1976</u>
GDP per capita (constant K f)	43.2	54.6	55.2
Share of manufacturing in GDP (%)	10.4	11.8	12.1
Balance of trade (K f m)	-47 (a)	-88.5	-175.7(b)
Share of manufactures in exports (%)	11.5(c)	12.3	11.8

(a) 1967

(b) 1975-1976 deficit of £115.3m favourably affected by temporarily high coffee prices.

(c) 1965.

Source: R. Kaplinsky and others, op. cit, Chapter 2.

In the light of these developments the attractions of small scale industry are obvious. Through using more appropriate technology, it is likely to lessen inequalities, help decentralise industry, substitute for imports of capital, intermediate and consumption goods, increase per capita income growth (through more efficient use of scarce-capital and through its potential long-term impact in lessening the rate of population growth as per capita incomes increase) and possibly even to increase the share of manufactured exports, once the stranglehold of foreign investment on the economy is diminished. Although we have seen that the growth of small scale industries is ultimately constrained by the direction of technological progress and market structures,

^{1/} See R. Kaplinsky and others, op. cit, forthcoming, Chapter 6. While Kenya's population grew 44% between 1966 and 1976, robberies more than doubled and the prison population went up by 74%. Ibid, Chapter 2.

we have also observed that the very openness of these developing economies (as represented by the case of Kenya) has inhibited the positive role which small scale industry may have played.

Three broad policy responses are available. The first is to increase the openness of the economy by reducing protective barriers even further (for even the most open economies offer some protection to local industry) and influencing factor prices to represent opportunity costs more closely (notably by lowering the relative cost of labour and prohibiting unionisation) in the hope that this will induce industrialists to use appropriate technology in response to "economic realities". The second alternative is to fundamentally reorient the industrial strategy away from the open economy, trying to draw out the benefits of strategies (b) and (c) discussed above. And the third option, is to maintain the basic openness of the economy, but to attempt to increase the role of small scale industries at the margin, in the hope that in the long run there will be a significant move to the use of these more appropriate technologies, but nevertheless allowing the discipline of the international economy to encourage the survival of only the more efficient small scale industries. In the policy prescriptions which follow, we confine ourselves to the third option (suggesting more incremental changes) since we believe that the more radical options will be considered in other country-studies, and because we believe it unlikely that many of these open developing economies (such as Kenya) will be ready to follow the more radical strategies.

In the light of these observations, what is the potential role of external economic cooperation, and particularly that of international organisations in the incremental stimulation of small scale industries in open, developing economies?

(a) Assistance in Trade

We have seen that small scale industry has been constrained by the nature of international trade. Imports of high-income consumption goods have reinforced the demonstration effect and prejudiced consumers against the "inferior" goods produced by local, small scale industry. Imports of capital goods have predominated from developed countries, and hence advantage has not been taken of more appropriate techniques originating from other developing countries. Because of the lower tolerances of these inappropriate techniques to variations in the quality of intermediate inputs, and also because of the vertical integration and global purchasing policies of foreign investors, this has required the use of imported, rather than local intermediate inputs.^{1/} Exports of the output of small scale industries have been hampered by product variations, poor marketing and the "inferior" nature of their output.

^{1/} For a good case study of this in Kenya, see S. Langdon, 'M.N.C.s, Taste Transfer and Underdevelopment', Review of African Political Economy, 2, Spring, 1975.

Some of these problems will be difficult to remedy. But others are remediable, certainly at the margin. Marketing expertise can be trained and here there is certainly scope for international assistance. An example of this sort of activity is the International Trade Centre - in Kenya's case the ITC has, through its assistance to the Kenya External Trade Authority, played a valuable role in the marketing of products from large scale industry and in the training of marketing expertise. Its preliminary role in stimulating handicraft exports can be widened to cover other products of small scale industries. But such exports depend upon improvements in quality, and there is clearly scope for improved extension services (possibly under the aegis of UNIDO) specifically related to improving the quality and lessening the variability of the output of small scale industries.

There is clear evidence from Kenya that there are notable benefits to be obtained from switching the sourcing of some capital goods from developed to developing countries. The existing bias in trade away from other developing countries is partly a legacy of old, colonial links. But it also follows from the effective salesmanship of developed country machinery producers. The inherent advantages of small scale industries in developing countries - their atomisation, their dispersion and their Heath-Robinsonish technologies - at the same time inhibit the transfer of their technologies, not only to other developing countries, but even within their own ones.^{1/} Thus, there will be significant gains to be obtained in widening the search for alternative techniques before decisions are made. International agencies have a multiple role to play in this regard. They can formalise this search (as in the new ILO/UNIDO Technology Manuals for individual sectors) and disseminate this information. They can also, through selected technical manpower inputs, assist developing countries in screening new investments before decisions are made. And, by financing the travel and subsistence of small scale industrialists (both within and between developing economies) identified in the process of searching for alternatives, they can assist in the effective development and commissioning of small scale technologies.

(b) Assistance with Finance

We have seen that Kenya's specialised agency for small scale industry was arm-twisted out of a developmental and into a commercial role in the stimulation of small scale industry. This probably is a mistaken strategy since, by its nature, small scale industry in developing countries requires significant support and, often, the more appropriate a technology and an entrepreneur, the greater the initial support which is required. While the non repayment of debt which results from political contacts or fraud may be deplorable, the "failure" of other enterprises may well represent a learning process by the entrepreneur in developing his business skills and his technology, and hence such "failures" may well be the embryos of future successes.

 1/ It is extraordinary how much greater is the variation between the efficiency of small scale local, rural brick ovens in Kenya, compared to that between the large scale, imported ovens used in urban bakeries.

Differentiating between deceit and the learning process may well require the placement of technical experts seconded by international agencies. But most often, the local agencies are well able to distinguish between the two types of "failed" enterprise and the role of international agencies can best be confined to a financial one providing the funds to subsidise small scale industry, hence reinforcing the developmental role to be placed by local specialised agencies.

(c) The Training and Transfer of Skills

As we saw in Section II(b) above, non-modern small scale industry often requires craft-like skills in operation. Moreover, those incorporating indigenous technological developments have often been developed spontaneously outside the umbrage of the formal science and technology system, and there is consequently much scope for the optimisation of these technologies. Both sets of skills - in operation and in the optimisation of the technologies - will probably be deficient in small scale industries and may require up-grading, and this suggests a positive role to be played by international agencies.

The problem which arises is that the skills available in many international agencies, as well as in the formal science and technology system, are often of an inappropriate type and their utilisation may well cause more harm than good. The precise nature of appropriate skills and the system through which these might be slotted into small scale industries needs careful thought. One hitherto unexplored strategy is the transfer of informal skills between and within economies.^{1/}

The identification of suitable craftsmen, the communication of their presence to potentially-interested parties, and the financing of such visits could well be undertaken through the network of international agencies, working in collaboration with local agencies.

^{1/} An example of this can be drawn from Kenya where a variety of interested parties were involved in optimising the indigenous design of brick bread-ovens. Mistakenly an 'expert' was drawn into the design stage. His first step was to hold-up the project until his "design office" (negotiated over months with his parent organisation) arrived. The second step was to call for the thorough testing of all material inputs ("to prevent explosions") and by the time this 'expert' was ready to proceed, the local initiative (of the sort which mobilised resources) had been crushed. A more sensible strategy would probably have been to arrange a visit by a carefully-selected informally-trained craftsman, from a country with a long history of making brick-ovens, and to allow him to tour the country assisting local entrepreneurs in the construction of their own bakeries. Such a strategy would have been cheaper and more effective, would have widened the horizons of all concerned and would at the same time allowed for the "capture" of mobilising energies.

(d) Assistance in the Control of Foreign Investment

Unfettered access to an economy by foreign investors plays an important role in the inhibition of small scale industries in a number of ways. These include the effect of foreign investment on consumption patterns, the importation of capital and intermediate goods resulting from their vertical integration and product specification and their negative impact on locally-owned industries. Moreover, in many cases foreign investment leads to a significant draining of foreign exchange, often undertaken covertly through transfer pricing practices.

International cooperation between developing countries, with the assistance of international agencies, has a positive part to play in the definition of a more constructive role for foreign investment in developing countries. Such a role extends beyond the code of conduct under discussion in many agencies and should incorporate more effective cooperation in bargaining and information sharing, particularly in the control of transfer pricing. It would appear that such cooperation is difficult to pursue in the framework of generalised international agencies, since the developed countries appear able to dilute effective action into less-binding codes of conduct, and it might well be desirable for such cooperation to be undertaken within agencies which only represent developing countries. But, one area in which the more generalised agencies have an urgent role to play is in the control of advertising. As we have seen, advertising in open developing economies plays an important role in the formation of inappropriate consumption patterns. Moreover, there is widespread evidence to suggest that the advertising ethics of MNC's in developing countries are often of a scandalously low standard, of a sort not legal in their home countries.^{1/} The control of such malpractices - possibly initially through a code of conduct, and subsequently through legislation in individual countries - is an urgent requirement and is a suitable activity to be undertaken by one or more international agencies.

(e) Assistance in the Generation of Technology

The concentration of R and D efforts in large firms in developed economies is a well-known fact and the details need not be drawn out here. However, given that we have identified the technological factor as being one of the prime constraints on the expansion of small scale industries, this concentration of R and D and the inappropriate technologies which have resulted, is of obvious relevance to our discussion.

The proportion of GNP spent on R and D, as well as the absolute sums involved, are much lower in developing than in developed economies. It would be relatively simple if the answer was merely to increase the level of expenditure by developing

^{1/} See, for example, R. Ledogar, *Hungry for Profits: US Food and Drug Multinationals in Latin America, IDOC/North America*, New York, 1975 and C. Medavar, *Insult or Injury*, Social Audit, London, 1979.

countries. Unfortunately, the problem is more complex and the case studies which exist ^{1/} suggest that much of the R and D which is undertaken in developing economies bears little relation to the needs of local industry, and even less to that of small scale industry.

Precisely how these problems are to be overcome is difficult to envisage, and it must of course depend upon the specific characteristics of the countries which are involved. To suggest an overall role which can be played by international agencies is hence problematical. One approach which can be taken is the selective encouragement of R and D facilities in particular sectors and institutions in developing countries. For example, the conditions in which foods are processed differ between tropical and temperate countries due to climatic variations. This suggests that insofar as the technology used in this sector in developing countries originates from developed ones, there may be scope for the generation of more appropriate food processing technologies. Particular institutions with a record of success may then be selected as sites for the development of particular technologies (e.g. sugar-processing in India or alcohol-via-carbohydrates in Brazil) and, as in the case of agricultural organisations such as ICIPE and CYMAT, resources may be concentrated to obtain results. The funding of such international ventures and, perhaps more importantly, the dissemination of results, may be undertaken by one (perhaps UNIDO) or more international agencies. Not only will this give a great stimulus to the generation of appropriate technologies, but insofar as the dissemination of existing appropriate technologies has been hampered by the monopolisation of property rights, this may well provide a spur to more widespread innovation on the global scale.

The more passive aspects of such a selective strategy may be undertaken by the proposed New International Mechanism for Appropriate Technology (IMAT),^{2/} but the active establishment of sectoral and regional R and D centres may require a more concentrated contribution from one or more international agencies.

^{1/} For that of Kenya, see R. Kaplinsky in C. Baron, op. cit.

^{2/} IMAT: A feasibility Study by a Team of Specialists, 1978.

IX. CONCLUSIONS

In this short paper we have covered a wide range of ground. Our primary concern has been with the development of small scale industry in Kenya and the impediments to its growth. In order to undertake such an analysis we have had to consider briefly the market and technological factors which circumscribe the potential role of small scale industries. From this we concluded that small scale industries in Kenya, while displaying similar tendencies to small scale industries in other countries, played a relatively limited role in the country's development. Whilst this diminished role was not the only factor explaining a low rate of growth, balance of payments difficulties and income inequalities, the potential contribution of small scale industries to a more equitable and sustained path of development should not be under-estimated. Our primary conclusion was that the relatively insignificant role played by small scale industries was directly related to the openness of the Kenyan economy.

Thereafter we observed that the problem of small scale industry in Kenya were similar to those faced by small scale industries in other open, developing economies, particularly those of the less industrialised type. While these economies had the alternative of moving to a more inward-looking strategy of industrialisation, we nevertheless concluded that it was possible to foresee a number of more incremental changes which could be instituted without such a radical altering of the stance of these economies. A number of areas in which such changes could be assisted by external economic cooperation were discussed at a broad level of abstraction. A more detailed set of strategies, involving step-by-step improvements in international cooperation, will hopefully be the outcome of the Joint Study on International Industrial Cooperation.

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BRAZIL: A COUNTRY STUDY

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CHAPTER 1: LATIN AMERICA IN THE WORLD ECONOMY

Most Latinamerican countries became independent during the nineteenth century, when the Industrial Revolution was turning Great Britain into the "workshop of the world". The international division of labour was built around this "workshop" and the new Latin-american nations were integrated into the capitalist world economy as suppliers of primary products.

At the end of the century, expansion of the export trade and its supporting services - transport, warehousing, banking, etc. - fostered the creation of a sizable urban economy in some of the larger Latinamerican countries. In this way a more concentrated domestic market for manufactures came into existence, which provided a basis for industrialisation through import substitution. Brazil was a case in point. In other countries, openings in the world market for processed goods gave the main impetus for the beginnings of industrialisation. That was the case of Cuba (sugar), Chile (copper) and, above all, Argentina. During the first three decades of this century, meat and leather made up between one third and one fifth of all exports from Argentina. In 1914, about 21 per cent of its manufacturing output was exported.^{1/}

Export-led industrialisation proved to be a big success in Argentina, at least until 1930. Economic growth was impressive and in 1929 its GNP per capita is estimated as having reached 700 dollars (at 1964 prices), one of the highest in the world. According to Colin Clark, Argentina ranked with the USA, Canada, Australia, New Zealand, England and Switzerland as enjoying (in 1925-34) the highest standards of living. In 1914, Argentina already had 31.7 per cent of its population living in cities with more than 20,000 inhabitants, and its literacy rate was 65 per cent; only 24.1 per cent of its labour force was in agriculture, while 38.1 per cent was in manufacturing.^{2/}

But other Latinamerican countries could not follow this path, either because demand for their exports - mostly tropical products and minerals - did not expand as fast, or because external trade made up a smaller proportion of total economic activity, with a much larger total population. Uruguay seems to have followed the export-led industrialisation model as successfully as Argentina, but Mexico and Brazil started quite soon to protect infant industries and, whenever external trade declined, industrialisation spurts occurred, taking advantage of idle capital and labour, set free by the reduction of export activity.

Industrialisation through import substitution was hampered by the lack of imported capital and intermediate goods, which resulted from the same decline of external trade that was behind its initial expansion. It could advance only as long as there was unused

^{1/} Martins, 1976, p. 75.

^{2/} Martins, 1976, several tables.

capacity, left over from the previous period. During the First World War and even more so during the Depression of the 1930s, immediately followed by the Second World War, industrialisation in Brazil was quite intensive, but at the end of these periods manufacturing suffered from shortages of inputs, and probably from declining productivity.^{1/}

At any rate, import substitution industrialisation appears to have been much slower than export-led industrialisation, prior to 1930. This may be seen by comparing the performances of Argentina and Brazil:

<u>Country</u>	<u>Period</u>	<u>Manufacturing output</u>	
		<u>Total growth</u>	<u>Annual rate</u>
Argentina	1910-14/1925-29	90.8%	4.4%
Brazil	1911-13/1924-30	47.8%	2.6%

Sources: Martins, 1976, table 13; Diaz-Alejandro, 1970, table 1.3.

As a result of slower growth of production for the world market as well as for the domestic market, in 1929/30 Brazil lagged behind Argentina in every aspect: its GNP per capita was only 129 dollars (at 1964 prices); in 1920 only 31 per cent of the population was literate and only 14.8 per cent lived in cities above 20,000 inhabitants.

After 1930, these trends were reversed: the import substitution path of industrialisation, followed by Brazil, Mexico and some other Latinamerican countries led to a much faster rate of economic growth than that achieved by countries, like Argentina, that had followed export-led industrialisation during the previous period.

During the 1930s, GDP per capita grew 52 per cent in Brazil but only 5 per cent in Argentina.^{2/} This large difference in growth rates was maintained during the succeeding decades. Table 1 (1) shows that GDP per capita expanded in Argentina very slowly, at annual rates of 1.2 to 1.4 per cent between 1939 and 1967, accelerating slightly to 2.4 per cent in 1967/76, while in Brazil annual growth rates fluctuated much more, but remained at much higher levels: 1.5 per cent in 1939/49, 3.3 per cent in 1949/58, 2.2 per cent in 1958/67 and 7.4 per cent in 1967/76.

This difference in growth rates may be ascribed to a large extent to the difference in industrial performance between the two countries after 1930. Table 1 (2) shows that manufacturing output, between 1939 and 1976, multiplied by more than 20 in Brazil and by less than 5 in Argentina.

^{1/} Manufacturing output, in Brazil, expanded at an annual rate of 11.2 per cent between 1933 and 1939, but this rate declined to 5.4 per cent during the war (1939-45). See Villela and Suzigan, 1973, p. 232.

^{2/} GDP per capita is estimated, in 1964 dollars, as having reached 700 dollars in 1929 in Argentina and 129 dollars in 1930 in Brazil; see Martins, 1976, table 14. ECLA estimates show GDP per capita in 1939 as having reached 735 dollars in Argentina and 196 dollars in Brazil (see table 1 (1)). ECLA's estimates are in 1970 dollars. The change in value of the dollar between 1964 and 1970 was not considered in the comparison.

Table 1 (1): GDP per capita of Latinamerican countries: 1939-1949-1958-1967-1976
(in US \$ of 1970)

<u>Country</u>	<u>1939</u>	<u>1949</u>	<u>1958</u>	<u>1967</u>	<u>1976</u>
Latin America	326	389	472	571	777
Venezuela	411	660	915	1,093	1,346
Argentina	735	825	935	1,050	1,304
Mexico	343	457	596	800	986
Panama	-	470	517	772	916
Uruguay	676	836	914	828	890
Costa Rica	-	346	453	585	796
Chile	468	562	626	816	742
Brazil	196	227	304	369	694
Colombia	332	376	407	466	606
Peru	-	307	384	500	591
Guatemala	-	311	318	376	494
Ecuador	157	234	281	330	471

Source: Naciones Unidas, Series Historicas del Crecimiento de America Latina, Cuadernos Estadisticos de la CEPAL, Santiago de Chile, 1978.

Table 1 (2): Manufacturing value added of select Latinamerican countries: 1939-1949-1958-1967-1976
(in US \$ million of 1970 and per cent of total for Latin America - in parentheses)

<u>Country</u>	<u>1939</u>	<u>1949</u>	<u>1958</u>	<u>1967</u>	<u>1976</u>
Latin America	6,186.6 (100)	10,846.8 (100)	18,935.1 (100)	32,375.2 (100)	62,024.0 (100)
Brazil	1,155.4 (18.7)	2,315.4 (21.3)	5,012.9 (26.5)	8,567.7 (26.5)	23,354.3 (37.6)
Mexico	1,061.9 (17.2)	2,194.1 (20.2)	3,781.3 (20.0)	8,096.5 (25.0)	14,425.2 (23.3)
Argentina	2,321.6 (37.6)	3,284.8 (0.3)	5,080.8 (26.9)	6,910.8 (21.4)	10,525.8 (17.0)
Colombia	269.3 (4.4)	515.2 (4.7)	956.6 (5.1)	1,553.8 (4.8)	3,093.4 (5.0)
Venezuela	175.4 (2.8)	372.0 (3.4)	878.6 (4.6)	1,576.1 (4.9)	2,697.2 (4.4)
Peru	-	347.1 (3.2)	574.0 (3.0)	1,274.4 (4.0)	2,152.4 (3.5)
Chile	-	818.2 (7.5)	1,130.2 (6.0)	2,028.7 (6.3)	1,781.4 (2.9)
Uruguay ^{a/}	206.4 (3.3)	358.2 (3.3)	563.2 (3.0)	560.7 (1.7)	735.2 (1.2)
Ecuador	66.6 (1.1)	128.4 (1.3)	178.0 (0.9)	297.9 (0.9)	666.8 (1.1)

a/ Includes Mining.

Source: Naciones Unidas, Series Historicas del Crecimiento de America Latina, Cuadernos Estadisticos de la CEPAL, Santiago de Chile, 1978.

In both countries, as in most others in Latin America, industrialisation through import substitution was the rule after 1930. However, Brazil had the advantage of having followed this path before, probably accumulating much more unused capacity in branches supplying the internal market than Argentina. This is the most likely explanation of why import substitution could take place on a much larger scale in Brazil than in Argentina up to 1945. After the end of the war, the recovery of external trade enabled both countries to expand their imports of capital and intermediate goods. In Brazil, economic policy continued to protect domestic industry from foreign competition, and the larger capacity to import was fully utilised for further industrialisation. Argentina, on the other hand, together with Uruguay, was unable to resume its previous export-led industrialisation strategy. Although exports expanded, they never regained their pre-1930 level. There were many causes for the slow growth of exports, one of the principal being that Great Britain, the traditional market for Argentinian food products, lagged behind most other industrialised countries in its share of the post-war boom.

The limitations of industrialisation in Argentina were chiefly structural in nature. Its economy was fully capitalist but capital accumulation depended on imports of industrial inputs. Unable to produce new technology, Argentina's economy could grow only to the extent that its capacity to import expanded. Although foreign investments contributed to enlarge this capacity, exports failed to grow steadily. Argentina could not sustain competition with the USA, Australia, Canada and other industrialised exporters of grains and meat, and during each growth spurt of its economy, balance of payments problems and accelerating inflation damped the economic upswing very quickly.^{1/}

The main factor holding back Argentinian exports has been the inability of agriculture to expand production of the exportable surplus. Between 1935-39 and 1973, agricultural output in the Pampa region, which provides most of the surplus for export, grew only 52.2 per cent, at an annual rate of 1.16 per cent. Opposition by large landowners to fiscal policies that would force them to intensify the use of land led to a situation where the only way to increase the exportable surplus has been the reduction of domestic demand for food products, by depressing real wages.^{2/}

Brazil, on the other hand, had the structural advantage of its backwardness. Far from being fully capitalist, its economy contained a relatively large subsistence sector, comprising mainly peasants practising a combination of simple commodity production and production for self-consumption. This peasantry was induced to join the capitalist economy, the expansion of which could be based on a form of "extensive" accumulation, with little need for imported inputs. Agricultural output grew by combining more labour with newly occupied land. Construction activities were also expanded by the use of handicraft techniques. The incorporation of a growing part of the labour force into the market economy as wage-earners increased effective demand and stimulated the overall growth of the economy.

^{1/} Braun, 1973.

^{2/} Flichman, 1977.

Nevertheless, Brazil was as dependent as Argentina on imports for the expansion of industrial capacity and diversification. The size of its manufacturing sector being much smaller (at least until 1958; see table 1 (2)), the same capacity to import could support a more intensive pace of industrialisation in Brazil than in Argentina. During the 1950s and the first half of the 1960s, Brazil's export proceeds did not grow at all, but between 1956 and 1961, the gap in the balance of payments could be filled by foreign capital inflows, mostly in the form of loans. Afterwards, growing external debt service coupled with stagnating export proceeds led to an inevitable financial crisis. Between 1962 and 1967 industrialisation almost came to a halt - manufacturing output expanded at only 2.6 per cent per annum - and the growth of the GDP slowed down. Overall, however, by incorporating new manpower into the capitalist economy and in this way "extending" accumulation, Brazil's growth and industrialisation performance were not only much superior to those of Argentina; in spite of applying essentially the same strategy, Brazil outstripped all other countries of Latin America.

Table 1 (1) provides data for the 12 Latinamerican countries that in 1976 had the highest GDP per capita. In 1949, Brazil had the lowest GDP per capita of all, much below the Latinamerican average. Between 1939 and 1976, the GDP per capita of all Latin America grew very fast, at an annual rate of 2.3 per cent. In Brazil, however, the annual growth rate was even higher - at 3.5 per cent - so that at the end of the period its GDP per capita was eighth in the list, still somewhat below the Latinamerican average. Besides Brazil, growth of GDP per capita was above average in Venezuela, Costa Rica, Ecuador and Mexico. Per capita GDP growth was much below average in Uruguay (where the annual rate was only 0.8 per cent), Chile, Argentina and Colombia. At the beginning of the period the most developed countries in Latin America, from the point of view of GDP per capita, were Argentina, Uruguay, Venezuela and Chile. Venezuela was able to maintain high growth rates during the 1950s, due to the rapid increase of its oil exports, and during the 1960s started to industrialise through import substitution. Uruguay and Chile, however, had to face stagnating export proceeds, while, at the same time, their small populations put narrow limits to the size of their domestic markets. This was, and continues to be, an obstacle for industrialisation through import substitution since most industries are unable to take advantage of scale economies and lower production costs. The production of intermediate goods, in which scale economies are particularly important, has often proved unfeasible in the smaller countries.

The size of the market may be measured approximately by the value of GDP. Table 1 (3) shows that, in 1939, Argentina, Brazil and Mexico were the only Latinamerican countries with sizable markets. This enabled Brazil and Mexico to substitute imports of many intermediate goods, making their industrialisation less dependent on imports than most other countries. Argentina was unable to reach the same level as a result of losing external markets. After the war, "as the volume of exports tended to decrease (1.1 per cent) and even more its buying power (3.8 per cent), Argentina presents the exceptional case of a Latinamerican country that had a decreasing volume of imports during the period (1945-1961), despite the increase of external financing during the second half of the 1950s and which

was even larger in 1961".^{1/} Argentina's imports of goods and services, in 1950 dollars, in annual averages decreased from 1,052 million in 1945-49 to 1,048 million in 1955-61. The figures for the same periods were 888 and 1,355 million for Brazil and 641 and 1,004 million for Mexico.^{2/}

Table 1 (3): GDP of Latinamerican countries: 1939-1949-1958-1967-1976
(in millions of US dollars of 1970 and in per cent of total for Latin America - in parentheses)

<u>Country</u>	<u>1939</u>	<u>1949</u>	<u>1958</u>	<u>1967</u>	<u>1976</u>
Latin America	38,251.1 (100)	57,488.4 (100)	90,023.6 (100)	140,218.6 (100)	245,201.9 (100)
Brazil	7,944.4 (20.8)	11,557.9 (20.1)	20,526.1 (22.8)	32,249.6 (23.0)	78,352.0 (32.0)
Mexico	6,651.5 (17.4)	11,819.3 (20.5)	20,534.8 (22.6)	36,552.3 (26.1)	60,367.6 (24.6)
Argentina	10,248.5 (26.8)	13,800.4 (24.0)	18,623.1 (20.7)	24,053.2 (17.2)	33,546.7 (13.7)
Venezuela	1,468.8 (3.9)	3,282.4 (5.7)	6,379.1 (7.1)	10,163.0 (7.5)	16,932.1 (6.9)
Colombia	2,948.8 (7.7)	4,247.8 (7.4)	6,072.4 (6.7)	9,308.5 (6.6)	16,188.6 (6.6)
Peru	- (0.0)	2,398.4 (4.2)	3,703.9 (4.1)	6,209.8 (4.4)	9,559.0 (3.9)
Chile	2,375.3 (6.2)	3,338.8 (5.8)	4,581.8 (5.1)	7,210.7 (5.1)	7,747.5 (3.2)
Ecuador	397.7 (1.0)	732.3 (1.3)	1,141.9 (1.3)	1,798.7 (1.3)	3,447.0 (1.4)
Guatemala	- (0.0)	882.5 (1.5)	1,195.7 (1.3)	1,269.9 (1.3)	3,092.5 (1.3)
All others ^{a/}	6,216.1	5,428.6	7,464.8	11,402.9	15,968.9

^{a/} Bolivia, Costa Rica, El Salvador, Haiti, Honduras, Nicaragua, Panama, Paraguay, Dominican Republic, Uruguay (10 countries).

Source: Naciones Unidas, Series Historicas del Crecimiento de America Latina, Cuadernos Estadisticos de la CEPAL, Santiago de Chile, 1978.

The importance of the size of domestic market for the extent to which import substitution is feasible may be judged by comparing the structure of imports of different countries. In table 1 (4), Latinamerican countries were grouped according to the size of their GDPs, as proxies for market size. It may be seen that the largest markets (Brazil and Mexico) advanced most in the substitution of consumer as well as intermediate goods. The medium-sized markets (Argentina and Colombia) substituted most consumption goods but

^{1/} ECLA, 1963, p. 90.

^{2/} Ibid, tables 86 and 113.

far fewer intermediate goods. The exception in this group is Venezuela, where the substitution of consumption goods started much later and is still far from complete. The small markets show lower levels of substitution of both consumption and intermediate goods (Chile and Guatemala) while the structure of imports of Peru resembles that of medium-sized markets corresponding in part to its relatively large GDP. The structure of imports of Ecuador, however, is nearer to that of Mexico; a paradox, since its GDP is so much smaller.

Table 1 (4): Import structure of Latinamerican countries in 1972
(in per cent)

<u>Countries</u>	<u>Consumer goods</u>	<u>Fuels and lubricants</u>	<u>Intermediate goods</u>	<u>Capital goods</u>	<u>Total</u>
1. <u>Large markets</u>					
Brazil	7.4	13.4	40.4	38.7	100.0
Mexico	14.5	3.7	42.2	39.5	100.0
2. <u>Medium-sized markets</u>					
Argentina	6.6	3.7	57.9	31.7	100.0
Venezuela	21.5	0.8	36.8	39.8	100.0
Colombia	12.5	1.2	46.6	39.5	100.0
3. <u>Small markets</u>					
Peru	13.7	5.6	52.8	27.4	100.0
Chile	18.4	8.9	44.2	28.1	100.0
Ecuador	15.4	3.3	42.9	38.1	100.0
Guatemala	24.8	2.0	49.5	22.8	100.0

Source: ECLA, Indicadores del Desarrollo Economico y Social en America Latina, Santiago de Chile, 1976.

However, one has to consider that Ecuador, together with Chile, Colombia, Peru, Bolivia and Venezuela, forms part of the Andean Group in which significant economic integration has been taking place. ECLA ascribes the rapid pace of industrialisation in Ecuador to its participation "in the Andean market as a relatively less developed country".^{1/} The limits of the domestic market for Ecuador's industry are, to some extent, relaxed to the extent of the regional market, encompassing all six countries. Table 1 (3) shows that Venezuela, Colombia, Peru, Chile and Ecuador together represented, in 1976, 22 per cent of the Latin-american market, a market size comparable to that of Mexico. It appears that the provisions favouring the less developed countries in this regional grouping have been quite effective. "The Andean Group records the first case in Latin America, and possibly also beyond, in which the only countries that increased their participation in exports during 1969-1974 were the two less developed."^{2/} Andean integration may also help to explain why the structure of imports in Peru corresponds to a somewhat larger market size than its GDP would lead one to suppose.

1/ ECLA, 1976, vol. 2, p. 393.

2/ Lara Beautell, 1976, p. 203.

A careful study of the relationship between the structure of production and the dynamics of development shows that market size also sets limits to the substitution of capital goods imports in Latin America. Strong inverse correlations were found between the proportion of domestic demand supplied by imports and the size of the domestic demand, measured in value (dollars), of non-electrical machinery, electrical machinery and transport equipment (as well as chemicals) in a cross-section analysis of nine countries: Argentina, Brazil, Mexico, Bolivia, Chile, Colombia, Ecuador, Peru and Venezuela.^{1/}

This analysis provides some explanation for the uneven industrialisation of Latin America during the past four decades. Industrialisation has been much more intensive in countries that in the beginning of the period possessed: (a) a sizable "industrial reserve army", composed of a large rural population that could be incorporated in the capitalist economy and (b) a relatively large population that represented potentially a large domestic market. Brazil enjoyed both these advantages most among the countries of the continent. As table 1 (2) shows, in 1939, Argentina was the most industrialised country of Latin America, accounting for more than one third of the continental manufacturing output. Brazil occupied the second place, but its manufacturing output was just half of Argentina's. In 1976, Brazil and Argentina reversed their share of Latinamerican manufacturing: Brazil, as the largest producer, had 37.6 per cent and Argentina, now in third place, had only 17.0 per cent. Mexico, also a large country, largely undeveloped at the beginning of the period, improved its relative position, ascending from third to second place and increasing its share from 17.2 per cent in 1939 to 23.3 per cent in 1976. Medium-sized countries, such as Venezuela and Colombia, also expanded their manufacturing output at a pace above that of the Latinamerican average, while smaller countries, such as Peru and Ecuador, maintained their relative share, possibly encouraged by Andean integration. The countries that lagged behind were Argentina, Chile and Uruguay.

To evaluate the role of industrialisation in the economic growth of these countries in relation to the continental average, one can compare their relative share in continental GDP (table 1 (3)) and in the total manufacturing output of Latin America (table 1 (2)). Argentina had larger participation rates in manufacturing than in GDP throughout the period from 1939 to 1976, indicating that industrialisation was the main factor behind its rather modest economic growth performance. Brazil had a lower share in manufacturing than in GDP in 1939, but reversed this trend from 1949 onwards, increasing the difference between its participation rates all the time: in 1976, Brazil produced 32 per cent of the GDP and 37.6 per cent of the manufacturing output of Latin America. Industrialisation thus appears to provide the main impetus to Brazil's development. Mexico demonstrates an opposing trend: its shares of continental GDP and of manufacturing were almost the same in 1939 and in 1949, but from then on its participation in GDP increased somewhat more than in manufacturing. Although the differences are not large, it appears that industrialisation has not played as important a role in Mexico's economic growth as in Latin America

^{1/} Fichet and González, 1976, graph 8.

as a whole. It may well be that the exports of "invisibles" - tourism and labour emigration - overlook industrialisation as the prime mover of economic growth. The same is true of smaller countries such as Venezuela, Colombia, Peru and Ecuador, where their larger share in GDP growth than in manufacturing appears to indicate that owing to constraints derived from market size, economic growth has been led mostly by exports. Chile's record has been similar to that of Argentina: larger participation rates in manufacturing than in GDP except in 1976, when this trend was reversed, indicating that the present crisis is affecting industry more than the rest of the economy.

The share of manufacturing in the GDP of Latin America has increased throughout the period 1939-1976: 16.5 per cent in 1939, 18.4 per cent in 1949, 20.6 per cent in 1958, 23 per cent in 1967, 25.4 per cent in 1976. While this indicates a process of rapid industrialisation during the past half century in practically all Latinamerican countries, the advance, as shown above, has been quite uneven. To understand the causes of this unevenness, and to evaluate the development prospects of different Latinamerican countries, it is necessary to consider that, in the first place, none of them, not even the most advanced, are able to maintain the pace of industrialisation without inputs originating from the so-called "mature" industrialised nations, be they capitalist or centrally planned. This dependency is not so much financial as technological. Any country can, to some extent, generate enough savings to finance some industrialisation, the obstacles to this being mainly socio-political in nature. But technological innovation is effectively monopolised, in the capitalist world, by a handful of countries, which exploit them on a worldwide scale through transnational corporations (TNCs). Industrialisation thus takes place, to a considerable extent, in countries that have specific advantages in terms of an international division of labour that is increasingly being shaped by TNCs.

International trade, more and more, is also being dominated by the intra-firm transactions of TNCs. For Latin America, "data collected for US TNCs in Brazil and Mexico show that intra-firm transactions accounted for 73 per cent and 82 per cent, respectively, of their manufactured exports in 1970, these proportions rising from 68 per cent and 54 per cent in 1960. In Mexico all exports of instruments and transport equipment were intra-firm. As for imports, 50 per cent of imports by subsidiaries in Brazil and 58 per cent in Mexico, in 1972, came from parent firms."^{1/}

While these trends do not prove that every less developed country has to depend on TNCs for its industrialisation, they do lend weight to the proposition that TNCs offer some developing countries an easy access to technology, resources and external markets, to the point of constituting a strategy of industrialisation that has been, and is being, followed by a number of Latinamerican countries. In fact, one might argue that, up to 1969, all Latinamerican countries, with the single exception of Cuba, had been trying to industrialise with the help of transnational capital. In that year, Colombia, Ecuador,

^{1/} Lall, S., 1978, pp. 5 and 6.

Peru, Chile and Bolivia signed the Cartagena Agreement establishing the Andean Pact of Economic Integration, thereby opting for an industrialisation strategy based on regional co-operation. However, since the practical results of this step have only begun to be felt quite recently, the uneven industrialisation pace of different Latinamerican countries during the past few decades may be attributed, in the main, to their varying degrees of success in competing for external resources, provided, above all, by TNCs.

TNCs tend to concentrate their investments in the more developed countries. "Concentration of attention on a few of the larger, richer countries reflects the transnational corporation's preferences for the larger (and more profitable) internal markets or for exploiting natural resources. As countries develop, so their attractiveness to transnational corporations increases."^{1/} This trend is clearly noticeable in Latin America, where the TNCs have located most of their investments in only two or three countries. Foreign direct investment in manufacturing increased in Brazil from US \$ 2,380 million in 1971 to US \$ 6,900 million in 1976, and in Mexico from \$ 1,730 million in 1971 to \$ 3,670 million in 1975. In other Latinamerican countries, foreign direct investment in manufacturing has been much smaller: in Argentina, \$ 1,480 million in 1973; and in Colombia, \$ 346 million in 1971 and \$ 425 million in 1975.^{2/}

The causal relationship and sequence are difficult to establish: whether TNCs invest in countries that are already industrialising, or whether the TNCs themselves are the prime movers of this industrialisation. There can be no doubt that industrialisation was indeed taking place in several Latinamerican countries, until the mid-1950s without the significant participation of TNCs. Since that period, however, large-scale foreign investments were made in the largest countries, where the substitution of imports of intermediate goods, durable consumer goods and transport equipment were both desirable and feasible, due to the large size of the domestic market. As a result, industrialisation in Latin America became more uneven - Brazil and Mexico together accounted for 46.5 per cent of Latin America's manufacturing product in 1958 and for 60.9 per cent in 1976 (see table 1 (2)).

The increasing participation of TNCs in the industrialisation of Brazil and Mexico provided not only technological know-how, but also finance and markets. As a source of external finance, however, direct investment provided only a small fraction of the total: "The countries that most attract the transnational corporations are also those that have borrowed most on the international capital markets. Just two countries - Brazil and Mexico - together accounted for almost one third of all the developing countries' borrowings in 1976."^{3/} In 1978, the net balance of capital movements to Latin America was 20,460 million dollars, of which 9,100 went to Brazil, 2,914 to Mexico and 2,120 to Venezuela; the year before the net balance was 15,840 million dollars, of which 5,742 went to Brazil,

^{1/} United Nations, 1978, p. 56.

^{2/} United Nations, 1978, p. 259.

^{3/} United Nations, 1978, p. 58.

2,717 to Mexico and 1,809 to Venezuela.^{1/} These three countries absorbed about two thirds of the net flow of foreign finance to Latin America in 1977 and 1978, helping Brazil and Mexico in particular to keep up the level of imports required by industrialisation, despite the smaller expansion of their exports. Such recourse, however, does not constitute a solution to the long-run problem of insufficient capacity to import, to close the so-called "external gap", since the accumulation of a huge external debt has simply increased the burden of its service. In 1978 alone, Latin America's net payments of interest and profits amounted to \$ 9,699 million, of which 3,451 came from Brazil and 2,620 from Mexico.^{2/} Nevertheless, the large quantum of foreign loans has helped to postpone the moment of crisis for Brazil and Mexico, enabling them to advance the substitution of crucial imports, which may, later on, facilitate the repayment of these loans.

Finally, it should be noted that some governments have been successful in inducing TNCs to export manufactures from countries such as Brazil and Mexico, thereby alleviating the squeeze on their balance of payments. While the growth of manufactured exports by less developed countries since the 1960s is an outcome of a complex process of change of the international division of labour, Latin America certainly has been affected in a very major and uneven way. The data in table 1 (5) show that some Latinamerican countries - Mexico, Brazil, Argentina and Colombia - have experienced fast growth in their exports of manufactured goods. Although at the beginning of this decade, manufactures accounted for only a small share of total exports in most Latinamerican countries, other than Mexico and Uruguay, this share has been expanding since then only in the larger countries of Latin America - the first four in table 1 (5) (declining sharply, for instance, in Uruguay).

Table 1 (5): Percentage shares of manufactured goods in total exports of selected Latin-american countries

<u>Country</u>	<u>1970</u>	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>
Latin America	-	-	14.2	11.7	12.8
Brazil	9.66	-	17.85	22.25	23.31
Mexico	29.98	-	40.81	36.00	-
Argentina	12.29	-	18.97	20.96	23.62
Colombia	7.95	-	25.41	27.57	20.60
Venezuela	0.94	-	1.37	1.01	1.01
Peru	1.26	1.21 ^{a/}	-	-	-
Chile	4.04	-	3.48 ^{b/}	4.25	-
Uruguay	23.74	8.53 ^{a/}	2.38 ^{b/}	-	-
Ecuador	1.76	2.25	2.45	-	-

a/ 1971

b/ 1972

Source: UNCTAD, 1978.

1/ ECLA, 1979, pp. 4 and 5.

2/ ECLA, 1979, pp. 4 and 5.

The expansion of manufactured exports from Latin America cannot be wholly ascribed to the presence of TNCs. In fact, many of these manufactures are of the "traditional" type - yarns, fabrics, footwear - in which nationally-owned capital usually predominates. Moreover, these manufactures are mainly imported by developed countries, where they replace local products. "Traditional" industries in developed countries are under heavy pressure from the increasing inflow of cheaper products originating in low-wage countries. The reaction against these imports by those in the industrialised countries who are losing their markets and jobs would have been irresistible, had TNCs not exerted their influence on home country governments to lower their barriers to the entry of goods from less developed countries. This stand of the TNCs may be ascribed, in turn, to the fact that they are now in the process of transferring a sizable proportion of their production lines to a few countries, such as Brazil or Mexico, to escape the pressure of fast-rising labour costs in their own countries.^{1/}

In this way the TNCs have helped to open markets for manufactured exports not only in developed countries but also in other less developed countries. Less industrialised countries that previously received their supplies of manufactures from the metropolises are now obtaining them (e.g. transport equipment) from TNC subsidiaries, established in countries that possess the double advantage of low-cost labour and large internal markets. These subsidiaries, initially created in order to supply the domestic market in Brazil, Mexico or Argentina, are now exporting some of their output to other countries of Latin America or Africa. In the period 1974-1977, for instance, between 38 and 47 per cent of Brazilian exports of manufactures have found their way to less developed countries, most of them in Latin America (see table 1 (6)). The co-operation between some less developed states and TNCs has thus given birth, since the 1960s, to a new model of industrialisation, based on a changed international division of labour in which a new role for the less developed partner has been found: that of producer of manufactures, whose costs depend primarily on the price of low-skill labour and on economies of scale. In Latin America, Brazil and Mexico increasingly have adopted this model, although it was also tried, albeit with less success, by Argentina and Colombia.

An alternative model, based on regional integration and Latinamerican capital, has been followed by the countries that were signatories to the Andean Pact in 1969. This is more than an attempt to widen markets for industry by small and medium-sized countries that were unable to follow the above-mentioned model (called, in contrast, the "international integration" model). It is, above all, a strategy of planned joint industrialisation, by means of which dependency on TNCs could be reduced. The main features of the Cartagena Agreement are: (a) a programme of gradual freeing of trade among member countries, and the establishment of minimum common tariffs with regard to the rest of the world; (b) sectoral programmes of industrial development, according to which each new manufacturing sector is allocated among member countries; (c) the harmonisation of economic policies, starting with those that deal with foreign capital.

^{1/} See Hymer, 1975 and Adam, 1975.

Table 1 (6): Percentage shares of Brazilian exports by destination and types of product - 1973 to 1977

	<u>1973</u>		<u>1974</u>		<u>1975</u>		<u>1976</u>		<u>1977</u>						
	Primary Products	Manufactured Products (1) (2)	Primary Products	Manufactured Products (1) (2)	Primary Products	Manufactured Products (1) (2)	Primary Products	Manufactured Products (1) (2)	Primary Products	Manufactured Products (1) (2)					
Developed Market Economies (DMEs)															
EEC	45.4	21.5 22.0	36.9	20.0 26.1	34.4	18.5 20.2	36.2	19.7 36.0	40.0	22.0 24.0					
United States	8.6	41.0 19.9	20.0	28.0 17.5	13.4	20.7 11.6	15.6	25.6 17.1	12.8	26.7 20.2					
EFTA	3.4	0.5 10.1	4.4	2.5 4.6	4.0	2.6 3.8	5.7	2.3 4.0	6.5	2.0 2.7					
Rest of Western Europe	4.6	0.7 0.5	7.0	1.7 6.2	8.4	1.3 7.6	11.0	1.5 4.8	9.7	1.6 3.4					
Japan	25.0	3.5 11.1	9.4	4.3 2.1	11.5	3.0 1.7	8.8	2.9 2.5	8.0	2.4 3.1					
Canada	0.9	0.9 1.6	0.5	2.7 1.0	0.6	3.6 1.6	0.3	3.4 2.2	0.2	2.8 2.3					
Oceania	-	0.2 0.3	0.2	1.3 0.4	0.1	0.8 0.2	0.1	1.0 0.9	0.1	0.7 0.3					
Sub-total	87.9	68.3 65.5	78.4	60.5 57.9	72.5	50.5 46.7	77.7	56.4 67.5	77.3	58.2 55.9					
Centrally Planned Economies (CPEs)															
East Europe	4.0	0.2 1.3	7.2	1.5 3.5	13.5	2.1 3.5	13.3	1.9 4.6	10.4	2.9 2.6					
Continental China	0.5	- 1.8	0.2	0.0 0.7	1.2	- 0.7	0.1	- 0.3	1.6	0.3 4.1					
Sub-total	4.5	0.2 3.1	7.4	1.5 4.2	14.7	2.1 4.2	13.4	1.9 4.9	12.0	3.2 6.7					
Third World															
LAFTA	3.0	23.3 27.1	4.5	25.9 11.6	4.2	31.7 14.9	3.4	25.1 10.1	3.3	25.4 11.6					
Rest of Latin America	1.8	4.2 0.2	0.7	4.2 0.2	1.6	3.4 0.4	0.1	4.7 1.7	0.4	2.0 0.7					
Near East	2.0	1.0 2.1	5.6	3.3 8.6	5.1	5.6 18.9	2.5	5.8 12.5	3.8	4.0 21.3					
Rest of Asia	0.8	3.0 2.0	3.4	4.5 17.5	2.0	6.6 14.9	2.7	6.0 3.3	3.2	7.2 3.8					
Sub-total	7.6	31.5 31.4	14.2	37.9 37.9	12.9	47.3 49.1	8.7	41.6 27.6	10.7	38.6 37.4					
TOTAL	100.0	100.0 100.0	100.0	100.0 100.0	100.0	100.0 100.0	100.0	100.0 100.0	100.0	100.0 100.0					
Percentage shares of total exports	66.1	23.6 7.7	57.6	28.5 11.5	58.0	29.8 9.8	58.2	29.2 8.9	57.4	31.7 8.6					

(1) Manufactures; (2) Semi-manufactures.

Source: Relatórios CACEX - Banco do Brasil.

The strategy of "regional integration" envisages the use of the common tariff to protect each sector for which regional import substitution is programmed. Simultaneous with the opening of the regional market through the gradual removal of inter-country barriers for the products of the new industries, the common tariff also acts to keep out foreign competition. Sectoral programmes of industrial development (SPID) are established by common consent, assigning to each member country the development of a "family of technologically interrelated products". Every other member country is pledged to free imports of these products only from the country that was assigned this SPID, to apply the common external tariff to imports of the same products originating from any other country, and to refrain from promoting the development of similar activities during a specified period. The first SPID was approved at the end of 1972 and covers some 200 items, mostly electrical equipment, instruments, tooling machines and machinery. In 1975, the SPID for petrochemicals was approved following difficult negotiations, and other SPIDs were undergoing preparation at the same time.^{1/}

The greatest success of the Andean Pact up to the present time lies in its continued existence and operation. The negotiation procedures, designed to ensure equitable benefits for members, are so cumbersome as to inhibit the achievement of concrete results. Each SPID takes several years to be negotiated and even longer to be implemented. Worst of all, the provisions of Decision 24 have not called a halt to technological dependency on TNCs, since each investment programme relies heavily on their participation. It appears that many TNCs have been eager to bid for partnerships under the stipulations of the Pact, thereby proving the attraction of an integrated Andean market in spite of all the restrictions imposed. It is doubtful, however, that the transfer of legal ownership, which can only take place in the long run, will actually shift real control to the hands of national private or public capital. The technology to be transferred may be the only one in existence, inevitably to be superseded by innovations already being developed by TNCs in the industrialised countries. In the normal course of events, the technology that will be acquired by the developing countries is likely to become obsolete before it is completely mastered by national entrepreneurs.

The strategy of "regional integration", while it offers prospects which may be superior to those provided by "international integration" in the long run, nevertheless bears large negotiating and other costs that may turn out to be fruitless if the development of new technology remains wholly in the hands of TNCs. This conclusion tends to reinforce the position of groups biased in favour of the strategy of "international integration", which, henceforth, can be defended paradoxically in the name of national independence. Regional integration demands that specific national interests should be given second place, below the interests of the regional grouping, at least in some issues. Since co-operation with TNCs is not excluded by regional integration, the temptation to compete for it in national terms does not seem entirely irrational.

^{1/} French-Davis, 1976.

The crises suffered by the Andean Pact originate mostly in such temptations. In 1973, Venezuela joined the Pact as a result of a change of policy by the government, while in 1976 Chile left the Pact as a consequence of the 1973 military coup that brought to power extreme proponents of international integration. Between 1973 and 1976, the Chilean government was partially successful in exerting pressure on the other Andean countries for the removal of most restrictions against foreign capital. For instance, in March 1976, the Fifth Convention of Chambers of Commerce of the Andean Group (the highest entrepreneurial body in the region) decided to ask their governments for the modification of Decision 24. During the following month, the Andean Pact Commission held a ministerial-level meeting in Lima, in which the governments were recommended to set up a special committee to revise Decision 24, thus giving in to Chilean demands. The meeting also authorised the Chilean government to sell the shares of enterprises expropriated during the Allende period to foreign investors, which is clearly against the provisions of Article 3 in Decision 24.^{1/}

In the end, Chile left the Andean Group in October 1976, providing an example that may be followed by any government that values international more than regional integration. It is obvious that even nationalist regimes that place their reliance on continental solidarity have the utmost difficulty in reconciling the interests of all member countries and in co-ordinating the implementation of joint industrialisation programmes. At the meeting of April 1976, deadlines for the reduction of tariffs inside the Group, and for the adoption of the common external tariff were postponed, the latter from 1980 to 1982. Bolivia and Ecuador also requested the extension of deadlines for investment, that they are required to make within the plans laid down in the SPIDs of engineering and petrochemicals. The same problems came up again at the meeting of the Andean Pact Commission in February 1978, "the five member countries deciding to extend the deadlines for industrial development programmes that should have been approved by the end of the year ... As well as new programmes, such as chemicals and pharmaceuticals, steel, fertilisers and telecommunications, the extensions may affect such programmes as engineering and petrochemicals, which are already under way."^{2/}

As a result of all these difficulties and delays, trade inside the Andean Group is still quite small. It reached, in 1977, 775.2 million dollars, making up only 2.6 per cent of the 30 billion dollars that were traded by member countries with the rest of the world.^{3/} It is difficult to draw a conclusion, to place much faith in the prospects for accelerating the development of the Andean Pact.

The third historical alternative of industrial development in Latin America has been that followed by Cuba since 1961. Before the victory of the 1959 Revolution, Cuba had been a typical Latinamerican country, one of the several small economies that relied on

^{1/} Briones, 1976.

^{2/} LA Economic Report, 3/78.

^{3/} LA Economic Report, 6/78.

the export of a single crop and never tried hard to substitute imports through the protection of domestic industry. Cuban industrialisation had been promoted on a free trade basis, with manufacturing established on the island, mainly with US capital, in order to take advantage of low-cost labour and the proximity of the local market. "Cuba's internal market was dominated by imports. Not only did the imports greatly exceed the domestic manufactures, but they were infinitely greater in variety. Every conceivable type of goods was imported - from cornflakes to tomato paste; from nails and tacks to tractors, trucks and automobiles; from thread to all types of clothing; from goods for Sears and other department stores to accessories for the home, fertilisers and insecticides for agriculture, and materials and equipment for industry and construction."^{1/}

When the United States broke off economic relations with Cuba, the economic dependency of the island was so great that its every-day life could not have been sustained without the constant import of all kinds of goods and services. Since the break was political - mainly over the expropriation of US-based firms - Cuba was forced to switch its external dependency over to countries that were willing to support its new political course. In that way, at least during a certain period, Cuba became as dependent on the Soviet Union and other East European countries as it had been previously on the US.

Cuba is too small - with a total population of only 7 million - to be able to reach a high degree of self-sufficiency. Although it has to integrate its economy with other countries, dependency on the US had been established on highly unequal and exploitative terms, so that a reduction of external dependency became a national goal, to which the new revolutionary regime gave high priority. Industrialisation through import substitution was the most important objective of the first development strategy, adopted between 1961-1963. One good reason for this endeavour was that the switching of supply sources from the nearby United States to East Europe and China increased transport costs enormously, making the local production of low value, density goods economically necessary. Unfortunately, "the industrialisation programme was badly designed. Because the programme was constructed with disregard for the principle of comparative advantage, and for the availability of raw materials and intermediate goods of domestic origin, imported input requirements increased from 1961 to 1963."^{2/}

As a result, external dependency worsened even further, as shown by a rapidly expanding deficit in the country's trade balance. In 1964, Cuba changed its strategy of development, giving priority to production for export, and subordinating industrialisation to this goal. An ambitious target was established for the production of sugar, the main export staple of Cuba: 10 million tons was the output goal for 1970. Most industrial investments were directed towards "the refurbishment of plant and equipment in the sugar industry" and "to industries producing agricultural inputs (farm machinery, fertilisers,

^{1/} Boorstein, 1960, p. 4.

^{2/} Ritter, 1973, p. 219.

some construction materials, etc.)" as well as those "which processed agricultural products (food processing, dairying, sugar cane derivatives) or which earned foreign exchange (nickel)."^{1/}

This strategy did not prove much more successful due to faulty planning, and the lack of technological and administrative skills. The 10 million ton target proved beyond Cuba's means, and the effort to reach it was pursued without regard for costs. The 1970 record crop of 8.5 million tons was achieved at the cost of "losses in the non-sugar economy (which) may well have overwhelmed the gains in sugar production."^{2/} Such "errors" cannot be ascribed to individuals or to the political leadership as a whole, although Fidel Castro blamed himself and his colleagues in the government. They also have to do with the fact that Cuba underwent a thorough going social revolution, and the new rulers of the country did not possess the necessary know-how to correctly appraise its productive possibilities. It appears that the old Cuban dominating class which was expropriated in 1959-61 and emigrated to Miami, did not possess it either. "...the keys to Cuba were lodged in the United States and not in Havana. American managers were the only ones with enough know-how to run Cuban factories; American institutions were the only ones familiar with the climatic and geological nature of the various provinces. These were some of the terrible aftereffects of fifty years of semi-colonial domination. When the Revolution started, Cubans were as little familiar with their own homeland as their new friends from faraway Europe."^{3/} This comment might apply with equal force to most other countries in Latin America.

Production appears to have stagnated in Cuba during the 1960s, as the price paid for the learning process of its new ruling class. From 1970 onwards, a more balanced strategy of development was adopted, resulting in high growth rates. The annual average rate of growth was "over 10 per cent for 1971-75 and is expected to stabilise at 6 per cent for 1976-80."^{4/} What concerns international co-operation is that Cuba chose a form of regional integration, albeit different from that of the Andean Pact. Being virtually isolated from the rest of Latin America for most of the time, Cuba favoured ideological instead of geographical proximity. Cuba became a full member of COMECON in 1972, with its 1976-1980 five year plan co-ordinated with those of the other COMECON countries.^{5/}

The most significant part of the Cuban experience is not, however, its strategy of international co-operation but instead the rapid transformation of its social structure. The expropriation of private owners of land and capital, the urban reform limiting rent payments to 10 per cent or less of income, the free and plentiful supply of educational

^{1/} Ritter, 1973, p. 227.

^{2/} Ibid, p. 248.

^{3/} Karol, 1970, pp. 227 and 228.

^{4/} Fitzgerald, 1978, p. 14.

^{5/} Fitzgerald, 1978.

and health services - all this amounted to a radical income redistribution "in favour of lower-income groups largely at the expense of rural and urban landlords, of some businesses and dividend receivers, and of some holders of government sinecures."^{1/}

The increased purchasing power of the common people resulted in an expanded demand for all sorts of consumer goods and services which could not be fully satisfied due to the difficulties mentioned above. This would have sparked off a runaway inflation in a capitalist economy, but, due to the centrally-planned character of the economy, inflation could be suppressed through a comprehensive rationing scheme. As a consequence, the worst of poverty and deprivation were eliminated with everybody being given a consumption basket large enough to fulfil their basic needs.

Rationing and repressed inflation had ill effects, however, on labour productivity. People earned more money than they could spend - with a consequent break in the intended link between the amounts individually produced and consumed (in value terms). Moral incentives did not succeed in eliciting enough effort from the majority of workers and absenteeism grew enormously, to the extent of provoking the passing of an Anti-Loafing Law in 1971, which made out work to be a social duty as well as a right for physically and mentally fit men of 17-60 years of age and women of 17-55 years, while habitual absence from work was declared a crime. Material incentives were also reinstated with the introduction of work norms and bonuses. Consumer durables, still quite scarce, came to be distributed as major prizes for those regarded as hard-working.^{2/} Inequality of pay still seems to be held in check, but the growing availability of "scarce" goods (mainly durables) is making differences in buying power increasingly significant.

It is not obvious where this is leading Cuba. Equality in poverty has been swiftly achieved but has proved much harder to sustain as soon as "luxury" goods become available in small quantities. The decision lies in the political field - the extent to which manual workers are able to prevent the rise and consolidation of a "new class" of bureaucrats to preside over the distribution of scarce goods in high demand.

^{1/} Ritter, 1973, p. 154.

^{2/} Fitzgerald, 1973.

CHAPTER 2: BRAZIL - A CASE STUDY OF DEVELOPMENT THROUGH "INTERNATIONAL INTEGRATION"2.1 Past and On-Going Processes of Industrialisation2.1.1 Introduction of Modern Sector Industrialisation

Modern sector or capitalist industrialisation started in Brazil during the last century. Before slavery was abolished in 1888, the great majority of the population consumed home-made or handicraft manufactures. Only the rich few were able to afford industrialised products from abroad. The smallness of the markets, widely dispersed over a large territory, thwarted early attempts at import substitution. From 1885 onwards, European immigrants increasingly replaced slaves as wage-workers in the coffee plantations, thereby creating a fairly large market for industrialised goods around Rio de Janeiro and Sao Paulo. At the same time, tariffs were increased, initially for fiscal purposes, which provided protection for infant industries.

Modern industry was established at the end of the nineteenth century principally in textiles and other non-durable consumer goods. Brazilian entrepreneurs and immigrants were largely responsible, many of whom were themselves previously importers of the goods that they then began to produce in the country. Their products replaced not only imports but also home-made articles, since European immigrants possessed effective cash purchasing power which the slaves had not enjoyed before.

The import substitution of non-durables was completed between 1885 and 1939. When the Second World War limited the import of such products, Brazilian industry supplied domestic needs to a very large extent. Imports, in 1939, constituted only 3.1 per cent of the total supply of textiles, 3.1 per cent of manufactured food products and 5.6 per cent of beverages. In the case of paper, the share of imports was as high as 28.8 per cent in 1939, but declined to 15.7 per cent in 1942, indicating the extent of import substitution (see table 2 (1)).

The data in table 2 (2) show that economic growth in Brazil accelerated from 1920 onwards. During the 1920s, growth was spearheaded by coffee production for export. Increasing foreign competition impeded further import substitution and manufacturing output grew at about the same pace as GDP. The Depression during the 1930s changed this entire situation: the reduction of import capacity favoured import substitution, and the new regime after the 1930 Revolution instituted several policies to support industrialisation. The annual growth rate of GDP increased from 2.56 per cent in 1920/30 to 3.51 per cent in 1930/40, while that of manufacturing jumped from 2.52 to 5.47 per cent. After 1930, manufacturing output always grew faster than GDP, inducing a steady growth of the manufacturing share of GDP from 12.1 per cent in 1930 to 29.9 per cent in 1976. Industrialisation was particularly intensive during the 1940s, when manufacturing output expanded 8.95 per cent per year, thereby increasing its share of GDP from 15.0 per cent in 1940 to 23.3 per cent in 1950. Another activity that grew very fast during this period was

Table 2 (1): Relative share of imports in total supply^{a/} of manufactures, by industrial sector in Brazil: 1939-1952
(percentages based on 1949 constant values)

<u>Year</u>	<u>Non-metallic minerals</u>	<u>Metallurgy</u>	<u>Engineering</u>	<u>Electrical material</u>	<u>Transport equipment</u>	<u>Paper</u>	<u>Chemicals</u>	<u>Textiles</u>	<u>Food</u>	<u>Beverages</u>
1939	13.4	51.8	-	-	66.7	28.8	70.8	3.1	3.1	5.6
1940	9.5	43.7	-	-	61.7	23.6	61.4	3.1	2.9	4.2
1941	6.8	40.5	-	-	57.4	25.3	79.6	2.3	1.7	5.2
1942	7.5	26.1	-	-	53.4	15.7	47.3	1.4	1.1	4.5
1943	6.0	28.4	-	-	65.9	17.1	41.6	1.0	1.0	5.1
1944	8.3	37.9	-	-	66.0	21.8	35.8	0.6	2.5	4.6
1945	10.2	41.6	42.5	35.9	65.4	24.8	34.5	0.8	3.1	7.3
1946	12.6	40.3	52.2	52.1	69.3	26.5	35.8	1.9	6.1	8.0
1947	15.4	38.9	65.4	63.5	76.8	28.6	43.7	4.5	7.3	8.4
1948	11.4	23.9	59.4	53.5	66.6	16.9	44.9	4.8	6.4	5.9
1949	8.9	23.4	63.4	47.5	55.8	18.6	46.3	4.2	3.0	2.4
1950	7.9	18.3	60.3	40.4	50.7	26.1	47.5	2.4	2.7	2.7
1951	11.3	20.1	71.1	47.1	53.8	22.5	45.2	3.8	3.7	4.3
1952	11.0	19.0	64.6	39.8	45.0	21.8	44.7	2.1	4.2	2.2

^{a/} Total supply equals imports plus production minus exports.

Source: Malan and others, 1977, table V 25.

Table 2 (2): Brazil - GDP by economic activity 1920-1976
(value in millions of 1970 cruzeiros)

Economic Activity	1920		1930		1940		1950	
	Value	%	Value	%	Value	%	Value	%
Agriculture, forestry, hunting and fishing	4,171.8	22.9	5,525.0	23.4	7,097.8	21.4	8,545.8	16.8
Mining and quarrying	112.9	0.6	97.0	0.4	149.3	0.5	186.7	0.3
Manufacturing	2,201.1	12.1	2,834.8	12.1	4,974.0	15.0	11,805.5	23.3
Building	...		...		2,483.1	7.5	4,674.1	9.2
Transport and communication	491.9	2.7	745.7	3.2	1,218.7	3.6	2,309.0	4.5
Trade and finance	3,905.5	21.4	4,707.5	20.0	6,654.4	20.0	11,152.7	22.0
Other services	...		...		...		...
GDP	18,256.5	100.0	23,548.5	100.0	33,220.4	100.0	50,960.5	100.0

Annual growth rates (in per cent)

	1920/30	1930/40	1940/50	1950/60	1960/70	1970/76
GDP	2.56	3.51	4.36	6.80	6.00	10.5
Manufacturing	2.52	5.47	8.95	8.15	6.81	11.5

Economic Activity	1960		1970		1976	
	Value	%	Value	%	Value	%
Agriculture, forestry, hunting and fishing	13,144.5	13.4	17,743.2	10.0	24,893.4	7.7
Mining and quarrying	494.9	0.5	1,506.3	0.9	3,125.5	1.0
Manufacturing	25,903.6	26.3	50,382.6	28.3	96,686.9	29.9
Building	8,179.6	8.3	10,248.9	5.8	20,619.5	6.4
Transport and communication	5,260.4	5.3	10,138.5	5.8	19,324.5	6.0
Trade and finance	20,325.3	20.6	36,706.6	20.7	66,589.0	20.6
Other services	...		50,819.5	28.5	...	
GDP	98,425.8	100.0	177,545.6	100.0	324,378.5	100.0

Source: ECLA, 1978.

Transport and Communications. whose share of GDP rose from 2.7 per cent in 1920 to 6.0 per cent in 1976. Extensive road building, which started during the 1920s, was responsible for this growth, leading to the interlinking of Brazil's regional capitals - Sao Paulo, Rio de Janeiro, Porto Alegre, Belo Horizonte, Salvador and, after 1960, Brasilia and Belém - thereby creating a unified national market.

As a consequence, capital concentration in manufacturing was favoured by increasing economies of scale, which in turn led to a spatial concentration of industry, mostly in or around Sao Paulo. In 1949, Sao Paulo's share in manufacturing output was already 47.8 per cent, increasing to 54.5 per cent in 1959 and to 57.0 per cent in 1970, while the share of the whole Northeast decreased from 9.7 per cent in 1949, and 7.5 per cent in 1959 to 5.8 per cent in 1970.^{1/}

Direct state participation in the industrialisation process started during the Second World War, when Brazil's first integrated steel mill was established in Volta Redonde, with public capital. Some years later, in 1953, following an extensive nationalist campaign, the extraction and refining of oil came under state control as a monopoly of Petrobrás. Also most infrastructural services - transport, electric energy and communications - came under state ownership after the Second World War. In 1952, the Banco Nacional de Desenvolvimento Econômico was set up, in the shape of a public bank that was to act as the most important source of finance for import substitution activities (mostly heavy industry) and for investments in infrastructure.

After the War, Brazilian manufacturing was markedly lopsided: in 1949, 65.2 per cent of its output was made up of consumer non-durables, with only 26.2 per cent intermediate goods and 4.1 per cent capital goods (see table 2 (3)), and industrialisation was heavily dependent on foreign inputs. Although the end of the War reopened access to most sources of Brazil's imports, the capacity to import remained too limited to support rapid industrialisation, since the demand for Brazil's traditional exports - mainly coffee, sugar, cotton and cocoa - did not expand very much and conditions of international trade did not favour the expansion of new exports until the end of the 1960s. As may be seen from the data in table 2 (4), earnings from exports of goods and services stagnated at around the same level - about US \$ 1,500 million - from 1948/52 to 1963/65.

To break out of this deadlock, it became imperative to start the substitution of imports of durable consumer goods, intermediate and capital goods. This was the so-called "difficult" stage of import substitution, requiring large amounts of "lumpy" investments, sophisticated technology and an extensive domestic market. Already possessing the last, Brazil initially used public capital to finance investment and acquired technology in the international market. Between 1945 and 1952, import substitution was particularly effective in metallurgy, electrical equipment and paper. There was also some substitution in

^{1/} Conjuntura, 1977, table XVI.

her imports of transport equipment between 1947 and 1952 (table 2 (1)). Between 1949 and 1955, the share of non-durables in manufacturing output declined, while those of durables, capital goods and, above all, of intermediate goods expanded correspondingly (the last from 26.2 to 30.4 per cent) (see table 2 (3)).

Table 2 (3): Brazilian manufacturing structure by type of product: 1949-1955-1959-1966-1970-1975
(in per cent of total output)

Year	Consumer goods		Intermediate goods	Capital goods	Total
	Non-durables	Durables			
1949	55.2	4.5	26.2	4.1	100.0
1955	58.7	5.6	30.4	5.3	100.0
1959	49.6	8.3	30.7	11.4	100.0
1966	39.4	12.5	36.8	11.3	100.0
1970	35.4	17.4	36.3	10.9	100.0
1975	30.6	21.2	34.0	14.2	100.0

Sources: Ministério do Planejamento, 1969; Quadro 20 (for 1949, 1955, 1959 and 1966). Bonelli and Malan, 1976, table 3 (for 1970 and 1975).

Table 2 (4): Balance of payments, annual average indicators: Brazil 1948/52 to 1975/77

Years	Value (in US\$ 10 ⁶)	Total receipts		Total expenditures		
		Exports of goods and services (per cent)	Capital (per cent)	Value (in US\$ 10 ⁶)	Exports of goods and services (per cent)	Capital (per cent)
1948/52	1,477.0	96.6	3.2	1,704.0	94.9	4.7
1956/60	2,001.0	75.2	24.1	2,091.0	83.6	15.3
1960/62	2,071.3	68.7	29.0	2,256.0	82.0	17.1
1963/65	2,108.7	76.7	20.0	1,976.3	80.7	18.8
1966/68	2,927.3	66.9	29.9	2,740.6	82.5	16.3
1969/71	5,031.7	60.6	37.6	4,504.3	83.3	15.2
1972/74	13,158.0	53.2	45.8	12,258.7	82.9	14.6
1975/77 ^{a/}	20,918.7	55.7	44.3	20,578.2	83.9	16.1

^{a/} Our estimate.

Source: Weisskoff, 1978, table 1.

From 1956 onwards, a new impetus to industrialisation was given by the government's ambitious "Plano de Metas" (target plan). The strategy was to offer incentives and a high level of protection to firms that would aim to reach a specified degree of "nationalisation" of their output in a fixed number of years. At that time, several TNCs that were anxious not to lose the Brazilian market, accepted the government's conditions. New industries, such as the automobile industry, shipbuilding and the production of communications equipment, were, from the start, dominated by these TNCs. The technological superiority of TNCs led, at the same time, to the take-over of existing, locally-owned industries, particularly in the pharmaceutical industry, but also in traditional industries such as textiles and food products. The expansion of TNCs in Brazil through take-overs appears to be a growing phenomenon. A survey of subsidiaries of US-based TNCs in Brazil showed that none of those

established before 1945 resulted from take-overs, while the proportion of such cases increased from 9 per cent among those established between 1946 and 1950 to 22 per cent among those established between 1951 and 1955, until the proportion reached 66 per cent among those established between 1973 and 1975.^{1/}

An analysis of the change of the import share in total supply as an indicator of import substitution (table 2 (5)) indicates its prevalence in metallurgy, metal processing, electrical and communications equipment and chemicals mainly between 1949 and 1958; and in transport equipment between 1949 and 1971; in all other industries, the import share was already low in 1949, so that most import substitution must have taken place before. In some industries, such as metal processing and chemicals, while the import share increased again in 1961 or in 1971, this does not necessarily indicate a reversal of import substitution (in the sense of an increase of domestic demand inducing a larger volume of imports). It may be the result of short-lived bottlenecks and inelasticity of domestic supply. Increase of the import share took place in industries where technological innovations have been, and remain, frequent. Since innovations occur almost exclusively in industrialised countries, the resulting products have to be imported by less developed countries such as Brazil. This makes import substitution an unending process which can never be terminated as long as Brazil maintains its total dependence on foreign technology, as it still does today.

Table 2 (5): Percentage share of imports in total supply (imports plus domestic output) of manufacturing industries, Brazil 1949-1958-1961-1971

<u>Industries</u>	<u>1949</u>	<u>1958</u>	<u>1961</u>	<u>1971</u>
1 Metallurgy	22.3	11.7	11.7	15.8
2 Metal processing	63.8	41.5	46.3	39.7
3 Electrical and communication equipment	44.8	13.3	16.9	21.1
4 Transport equipment	56.8	30.5	18.6	6.6
5 Chemicals, pharmaceuticals, plastics, soaps	29.3	20.0	17.4	29.7
6 Non-metallic minerals	10.9	5.1	4.4	3.4
7 Paper and paperboard	9.6	5.3	7.2	11.1
8 Rubber	1.3	6.5	14.7	4.4
9 Wood products	1.0	1.0	0.7	0.5
10 Textiles	6.2	0.6	0.6	2.0
11 Clothing and footwear	0.2	-	-	12.2
12 Food products	3.8	2.5	2.2	2.2
13 Beverages	2.4	2.6	2.6	0.9
14 Tobacco	0.4	-	-	-
15 Printing	2.2	3.0	1.0	3.8
16 Furniture	0.3	-		0.1
17 Leather	3.0	0.7		1.5
TOTAL	15.6	11.3	9.7	11.0

Source: Weisskoff, 1978, table 5.

^{1/} Newfarmer, 1978.

As a result of this new stage of import substitution, the structure of manufacturing output continued to change. As may be seen from table 2 (3), it was the share of durable consumer goods that grew most after 1955, from 5.6 per cent to 21.2 per cent in 1975. This was the result not only of import substitution but also of the large increase in consumption of these goods. The establishment of large firms (state-owned or subsidiaries of TNCs) brought forth the rise of a new class of professional managers and technicians, who could afford high-priced consumer durables, such as cars and colour TV sets. Incomes became more concentrated, particularly after 1960, as real wages were squeezed through growing inflation between 1960 and 1965, and afterwards as a result of deliberate policies to keep below the increase in the cost of living as a measure to combat inflation.

These policies produced a somewhat restricted, but still sizable, market for consumer durables. Enlarging credit facilities for consumers contributed to its further expansion, making this the leading in Brazil's industrialisation from 1959 onwards, as may be seen from table 2 (3). The share of intermediate goods expanded from 30.7 per cent in 1959 to 36.8 per cent in 1966, decreasing subsequently to 34 per cent in 1975. The share of capital goods increased from 5.3 per cent in 1955 to 11.4 per cent in 1959, but stagnated until 1975, when it rose to 14.2 per cent (see table 2 (3)). Even if the structure of Brazilian manufactures is more balanced in 1975 than it was in 1949, it is clear that import substitution has been largely completed only for durable and non-durable consumer goods. External dependency on intermediate and capital goods has, in fact, not only continued but has been aggravated since 1966.

2.1.2 Changes in the Direction of Industrialisation

To sum up the preceding discussion, one may distinguish between three broad stages in the recent history of Brazilian industrialisation:

(a) From 1930 to 1955, when industrialisation followed the "easy" path of substituting non-durable consumer goods imports, this was accomplished mostly by small and medium-sized firms, owned by Brazilian private entrepreneurs, although some large state-owned companies were established towards the end of this period.

(b) From 1955 to 1968, when industrialisation embarked on the "difficult" path of substituting imports of consumer durables, intermediate and capital goods, this phase was dominated by TNCs and state capital, giving the newly established industries a markedly oligopolistic character. Due to the stagnation of proceeds from exports of goods and services, there was greater reliance on the import of capital, mainly in the form of loans. The share of foreign capital in total external receipts increased from 3.2 per cent in 1948/52 to 29 per cent in 1960/62, with a corresponding rise in the share of capital expenditure in total external expenditure from 4.7 per cent to 17.1 per cent (see table 2 (4)). The industrial upswing, peaking after 1956, came to an end in 1963, under the combined pressure of near-runaway inflation and growing balance of payments difficulties. Dealing with inflation almost brought industrialisation to a complete halt between 1963 and 1968.

Manufacturing output (in 1970 cruzeiros) increased from 31 billion in 1962 to 35.5 billion in 1967, at an annual growth rate of only 2.7 per cent, or less than the growth rate of the population. Rapid growth was resumed only in 1968.^{1/} To overcome the balance of payments difficulties, measures were taken to attract foreign capital and to stimulate the export of manufactures. The resultant change in the direction of industrialisation led to the following, third stage.

(c) From 1968 onwards, export promotion replaced import substitution as the main lever of industrialisation. Due to income concentration, the structure of demand changed in favour of the growth of production of consumer durables. Non-durable consumer goods industries, faced with a slowly growing domestic demand, took advantage of the incentives offered by the government to expand the export of their products: footwear, textiles, processed foods etc.; the relative neglect of import substitution resulted in the re-appearance of large deficits in the trade balance after 1974, aggravated by the sharp rise of oil prices since that year. To face this problem, new schemes to support the substitution of capital goods imports in particular were put into effect after 1975, while incentives for the export of manufactures were also retained.

Considering the three industrialisation paths described elsewhere by UKIDO - 1. externally responsive, 2. national goals-oriented and 3. social priorities-determined - one might conclude that Brazil followed model 2 during the first and second stages of its industrialisation. The first stage (1930-1955) corresponded quite closely to model 2, as the result of the crisis affecting the international division of labour through the worldwide depression of the 1930s, followed by World War II. The second stage corresponded to model 2 in a modified form, to the extent that international capital took an active part in the industrialisation process, integrating the most modern parts of Brazilian industry within the transnational economy, or that part of the world economy that is "centrally planned" by TNCs.^{2/} The third stage of industrialisation comes closer to model 1, to the extent that comparative advantage became an important criterion for determining industrial investment priorities. Nevertheless it retained many aspects of model 2, such as the emphasis on strategic industries deemed important for national independence and security. The simultaneous pursuit of export promotion and import substitution after 1975 combines both types of criteria.

The present industrial structure is "viable" to the extent that it is able to obtain sustained external support, in the form of foreign markets for its exports (provided mostly by TNCs, as was seen in chapter 1), of foreign finance and of foreign technology. It is, therefore, unable to sustain its own future growth. The domestic market for manufactures is still highly protected, and restrictions on imports have been increased lately in order to reduce the deficit in the trade balance. The average nominal tariff, including all manners of restrictions, has been estimated as oscillating between 34 and 175 per cent in the period 1954-1974. The estimate for 1974 is 81.6 per cent.^{3/}

^{1/} ECLA, 1978.

^{2/} For this concept, see Singer, 1977.

^{3/} Pastore and others, 1976.

There can be no doubt that Brazilian manufacturing has been quite successful in competing in the world market over the past decade. Between 1968 and 1977, exports of manufactures grew from US \$ 197.8 million to \$ 3,845.0 million, as perhaps the major factor behind the spurt in Brazilian exports during this period, accounting for 10.5 per cent of total exports in 1968 and for 31.7 per cent in 1977 (see table 2 (6)). This success is the result, to a large extent, of a whole range of incentives for exporters of manufactures. The net result of taxes and incentives is an export subsidy that, in 1974, varied from an average of 28 per cent for furniture and 25.7 per cent for transport equipment to an average of -4.8 per cent for food products.^{1/} In 1975, the value of exports benefiting from incentives was US \$ 7,188.9 million (incentives amounting to 32.8 per cent of their total value).^{2/}

There is a growing resistance, in the developed countries, to the subsidisation of exports by the Brazilian government. At the end of a period of threats and protracted negotiations, the government has finally given in to the point of gradually eliminating export incentives (as well as restrictions on imports). It is difficult to foresee the impact of these measures on the export performance of Brazil's manufactures, which also have to face growing protectionism in the developed countries. It is probable, however, that the rate of growth of exports of manufactured goods will not be maintained at the very high level of the past ten years. Should this prove to be the case, industrialisation in Brazil will be forced to take a new direction, which could either place (a) greater reliance on the internal market, stressing more import substitution than export promotion in the determination of investment priorities or (b) engage in a larger effort to win markets for its manufactures in still less developed countries. Latin American, African and Asian (except Japan) countries absorbed, in 1973, 31.5 per cent and, in 1977, 38.6 per cent of all Brazilian exports of manufactures (see table 1 (6)).

2.1.3 External Links in the Industrialisation Process

(a) Agents of External Co-operation

The analysis above has shown the extent to which Brazilian industrialisation has taken advantage of international co-operation, mainly in the form of foreign investments and foreign loans. The importance of each source may be gauged by their share in the Brazilian Foreign Debt (see tables 2 (7) and 2 (8)). From this point of view, the most important are foreign banks, since loans in currency make up about two thirds of the entire debt, and their share has been increasing since 1970, from 43.14 per cent to 66.90 per cent in 1978. The share of international agencies has been slowly declining, but their financial assistance has roughly paralleled the expansion of Brazil's foreign debt, accounting for 7.24 per cent. Among the international agencies, the largest lender, by far,

^{1/} SEPLAN, 1978, table XII.

^{2/} SEPLAN, 1978, table XIII.

Table 2 (6): Chief products exported; Brazil 1968-1977
(US \$ million, f.o.b.)

	<u>1968</u>	<u>%</u>	<u>1971</u>	<u>%</u>	<u>1974</u>	<u>%</u>	<u>1975</u>	<u>%</u>	<u>1976</u>	<u>%</u>	<u>1977</u>	<u>%</u>
TOTAL	1,881.3	100.0	2,903.9	100.0	7,951.0	100.0	8,669.9	100.0	10,128.3	100.0	12,139.4	100.0
A Basic products	1,491.7	79.3	1,982.5	68.3	4,517.9	56.8	4,981.8	57.5	6,088.2	60.1	6,926.5	57.0
B Processed products	380.5	20.2	828.2	28.5	3,238.5	40.7	3,479.5	40.1	3,659.0	36.1	4,935.0	40.7
- Semi-manufactures	182.7	9.7	255.6	8.8	975.7	12.3	895.0	10.3	882.9	8.7	1,090.0	9.0
Pine wood, saved	68.9	3.7	71.8	2.5	50.0	0.6	55.0	0.6	20.8	0.2	18.0	0.1
Castor oil	36.4	1.9	40.0	1.4	128.4	1.6	51.9	0.6	76.6	0.8	87.5	0.7
Processed cocoa	25.9	1.4	24.3	0.8	100.0	1.3	60.2	0.7	70.0	0.7	96.8	0.8
Sugar	-	-	6.4	0.2	283.3	3.6	204.4	2.4	52.4	0.5	55.8	0.5
Soya oil	-	-	-	-	1.9	0.0	152.4	1.7	174.6	1.7	274.2	2.3
Others	51.5	2.7	113.2	3.9	412.1	5.2	370.7	4.3	488.5	4.8	557.7	4.6
- Manufactures	197.8	10.5	572.6	19.7	2,262.8	28.5	2,584.5	29.8	2,776.1	27.4	3,845.0	31.7
Engineering products	13.0	0.7	38.8	1.3	150.6	1.9	260.0	3.0	266.3	2.6	426.6	3.5
Processed coffee	22.8	1.2	49.7	1.7	116.0	1.5	79.8	0.9	225.5	2.2	326.6	2.7
Transport equipment	3.9	0.2	24.9	0.9	186.5	2.4	317.1	3.6	373.1	3.7	492.1	4.1
Footwear	0.4	0.0	29.3	1.0	120.3	1.5	165.2	1.9	175.1	1.7	174.4	1.4
Processed beef	12.6	0.7	50.9	1.8	81.0	1.0	70.6	0.8	113.6	1.1	118.8	1.0
Electrical machinery	5.9	0.3	28.5	1.0	183.1	2.3	160.5	1.9	189.4	1.9	281.0	2.3
Orange juice	11.7	0.6	35.9	1.2	59.2	0.7	82.2	1.0	100.9	1.0	177.0	1.5
Others	127.5	6.8	314.6	10.8	1,366.1	17.2	1,449.4	16.7	1,332.2	13.2	1,848.5	15.2
C Special transactions	9.1	0.5	93.6	3.2	194.6	2.5	206.6	2.4	381.1	3.8	277.9	2.3

Source: SEPLAN, 1978, table X.

has been the World Bank. The share of imports financed by US government agencies has declined sharply, from 10.57 per cent in 1970 to 4.39 per cent in 1978, while the share of other governmental agencies remained very small (2.36 per cent in 1978). The share of private suppliers has fluctuated around the 10-12 per cent level. During the recent past, therefore, financial support for Brazil has steadily shifted from governmental to private agents, as a result of changes occurring in the international capital market - the growing supply of euro-dollars and, since 1974, of petro-dollars, which are recycled by private banks.

Considering international co-operation not in financial but in real terms, signifying mainly the contribution of technology flows and of consumption standards, as well as access to markets, the chief agents have come to be the TNCs. During the first stage of industrialisation (1930-1955), other agents fulfilled these functions: importers of consumer goods contributed to the change of tastes and preferences, immigrants brought skills and know-how, Brazilian entrepreneurs (often born in Europe) travelled to England and other developed countries to acquire technology embodied in machinery and equipment. While all these agents continue to operate, they have been largely superseded by TNCs. Even state enterprises that were previously involved independently in technology acquisition have increasingly entered into joint ventures with TNCs. The role of foreign partners in such joint ventures is precisely to act as suppliers of technology.

Table 2 (7): Brazilian foreign debt position 1970-1978 (in US \$ million)

	<u>12/1970</u>	<u>12/1974</u>	<u>3/1978</u>
<u>Compensatory loans</u>	381.5	168.6	75.0
- Governments US Agencies (excl. USAID Program Loans)	313.9	168.6	75.0
- Others	67.6	-	-
<u>USAID Program Loans</u>	603.6	610.4	566.1
<u>Loan Bonds</u>	-	172.1	1,575.4
<u>Import Financing</u>	1,709.3	4,741.3	9,029.2
- International Agencies	456.0	1,388.4	2,505.9
World Bank	258.2	978.1	1,672.2
Inter-American Development Bank	181.4	311.7	648.3
International Finance Corporation	16.4	98.5	185.4
- Governmental Agencies	642.5	1,541.0	2,339.7
USAID Project Loans	266.3	444.4	546.8
US Export-Import Bank	190.4	542.7	894.3
Kreditanstalt für Wiederaufbau	55.5	178.6	390.2
Others ^{a/}	130.3	375.3	508.4
- Others	610.8	1,812.0	4,183.6
<u>Loans in Currency</u>	2,284.6	11,210.7	23,170.2
<u>Other Loans</u>	301.2	253.2	211.5
<u>Total Foreign Debt</u>	5,295.2	17,165.7	34,631.9

^{a/} US Gov. PL 430 - Wheat, Canadian Wheat Board, Japan Export-Import Bank.

Source: Boletim do Banco Central do Brasil, November 1978.

Table 2 (8): Composition of the foreign debt (in per cent)

	<u>12/1970</u>	<u>12/1974</u>	<u>3/1978</u>
Compensatory Loans	7.20	0.98	0.22
USAID Program Loans	11.40	3.56	1.63
Loan Bonds	-	1.00	4.55
Import Financing	32.28	27.62	26.07
- International Agencies	8.61	8.09	7.24
- US Governmental Agencies ^{a/}	10.57	6.32	4.39
- Other Governmental Agencies ^{b/}	1.56	2.66	2.36
- Others	11.54	10.56	12.08
Loans in Currency	43.14	65.31	66.90
Other Loans	5.68	1.48	0.61
TOTAL	100.00	100.00	100.00

a/ USAID Project Loans, US Gov. PL 480 - Wheat, US Export-Import Bank.

b/ Canadian Wheat Board, Japan Export-Import Bank, Kreditanstalt für Wiederaufbau.

Source: Table 2 (7).

It is, of course, difficult to evaluate the importance of each agent in such a complex process as technology transfer. A rough estimate, however, is possible through the analysis of contracts of technology transfer. A sample of such contracts for manufacturing industries, registered between 1963 and 1970, in order to permit remittances abroad, shows that, out of 1,983 such contracts, 708 (35.7 per cent) were made with enterprises controlled by foreign capital.^{1/} Since the transfer of technology from branches to parent companies is not paid for explicitly in most cases, such payments being legally restricted in Brazil, it is very probable that the share of 35.7 per cent is an underestimate. Considering as well the great expansion of TNCs in Brazil after 1970, one must conclude that at present, more than half of all technologies acquired for Brazilian manufacturing must be handled, at both ends, by TNCs.

(b) Fields of External Co-operation

International co-operation in the area of finance mostly takes the form of loans, rather than direct investment, in Brazil. One may evaluate the relative importance of each form, by comparing the stock of foreign direct investment with the size of the foreign debt. Data in table 2 (8) show that by 1971, the Brazilian foreign debt was more than double the stock of direct investment and about 2.8 times the direct investment in manufacturing. Since foreign direct investment grows through reinvestment, which can hardly happen to the foreign debt, a more adequate comparison would be between the amount originally invested and the debt. In that case, the debt, in 1971, was already 3.7 times

1/ Biatto et al., 1973.

the entire inflow of direct investments and 4.7 times that part of the inflow that went to manufacturing; in 1978, the corresponding ratios had risen to 4.3 times and 5.8 times. Thus, the importance of loans in relation to direct investment has been increasing over the past seven years.

Table 2 (9): Foreign direct investment and foreign debt; Brazil 1971 and 1978
(US \$ million)

<u>Foreign direct investment</u>	<u>1971</u>	<u>1978</u>
1. Total		
Investment	1,789.6	8,078.1
Reinvestment	<u>1,121.9</u>	<u>4,152.7</u>
Total	2,911.5	12,230.8
2. In Manufacturing		
Investment	1,399.0	5,972.7
Reinvestment	<u>984.7</u>	<u>3,437.9</u>
Total	2,383.7	9,410.6
<u>Foreign debt</u>	6,621.6	34,631.9

Source: Boletim do Banco Central do Brasil, November 1978.

Foreign finance has increased as a proportion of Brazil's external proceeds, as may be seen from table 2 (4): it rose from 29.0 per cent in the early 1960s to about 45 per cent in the 1970s. Brazil has been able to expand its income remarkably from her exports of goods and services - from US \$ 1,504.8 million in 1956/60 to \$ 11,651.7 million in 1975/77 - but its foreign expenditure has increased even faster - from US \$ 2,091 million in 1956/60 to \$ 20,578.2 million in 1975/77. Consequently, Brazil has been forced to have increasing recourse to foreign finance. The same phenomenon may be interpreted from another angle. The ready availability of liquid funds in the international capital market, and the willingness of international bankers to place a major part of their resources in quickly-growing and secure economies such as Brazil, led to the virtual explosion of foreign indebtedness in the 1970s, from US \$ 5,295.2 million in 1970 to \$ 34,631.9 million in 1978 (see table 2 (7)). At the same time, one should note that Brazil's currency reserves increased from US \$ 1,186.5 million in 1970 to \$ 5,269.1 million in 1974, reaching US \$ 8,916.6 million in July 1978. It is obvious that foreign loans have entered the country in larger amounts than can be spent in foreign goods and services, so that the Brazilian monetary authorities have had to adopt measures to restrict this inflow on more than one occasion. Nevertheless, the easy availability of foreign exchange must have facilitated the import of inputs for promoting industrialisation, as well as of expensive petroleum products that are partially squandered in moving millions of passenger cars in oversaturated metropolises. The burden of the debt service has already made itself felt: in 1977, interest payments absorbed 18.0 per cent and amortisations 29.6 per cent of all income from exports of goods and services.

International co-operation in the area of technology has been moulded to a large extent by the drastic shifts in consumption patterns brought about by the second industrial revolution. Although this revolution did not originate in Brazil, its products - cars, electric appliances, television sets, air transportation, etc. - quickly reached its elite, profoundly changing its way of life. "Modernisation" in Brazil meant, in economic terms, the adoption of consumption patterns (shaped by these new products) by the richest stratum of the population and its subsequent spread to broader, middle income groups.

Since all products of modern capitalist industry in Brazil - from textiles and food-stuffs to drugs, cars and TV sets - were created and developed overseas, the import of technology, mostly embodied in capital goods, was inevitable. Nevertheless, during the first stage of industrialisation (1930-1955), the new enterprises were directed and managed by Brazilians, who "learnt by doing", assimilating and sometimes adapting the technology brought from abroad. To fulfil the needs of this new industrialisation process, all kinds of institutions providing technological external economies were created: universities, technical schools, laboratories for research and quality control, funds to finance research and the diffusion of know-how, etc. When (after 1955) the TNCs opened up new industrial sectors that used more sophisticated technology, the assimilation process of new technology was arrested to some extent. While workers still learned to operate the new machinery, technicians were trained simply to translate foreign specifications and passively to follow processes introduced ready-made from the parent company. The scope for creative work was, therefore, severely limited, not only in the subsidiaries of TNCs, but also in the Brazilian firms that supplied components or serviced their products. For a Brazilian firm that is not directly dependent on TNCs, foreign technology has a cost that provides some margin for substitution. For such a firm, in many instances, it must be more advantageous, in terms of time and money, to invest in local research and development than to search for an appropriate technology in other countries. But this is not true for TNCs that invest in R + D on a large scale. To amortise this investment, the widest commercial application of research results must be encouraged, and they therefore regard any local R + D effort as a ruinous duplication of effort and expense.

The unfortunate coincidence is that just when the number of Brazilian scientists and technicians is growing and the human and institutional resources for significant import substitution of technology are available, the overwhelming presence of TNCs on the industrial scene acts to inhibit the local production of technology. As a result, a movement of resistance against the dominating role of TNCs in Brazilian industry is coming to life and gaining support among scientists and technologists. This movement also has adherents among the military. For the cause of national security, the military have always supported the growth of modern industry, and the armed forces have actively promoted the indigenous production not only of weapons, but also of communication and transport equipment. Many officers are themselves engineers and technicians, increasingly conscious of the constraints imposed by technological dependency on their activity.

A clear change of government policy concerning technology transfer is now discernible. In strategic areas, such as computers and communications equipment, incentives or contracts are given only to joint ventures of Brazilian firms and TNCs in order to enhance the potential for the autonomous development of technology in Brazil through initial acquisition from abroad. It is doubtful, however, that such arrangements will produce the expected results, unless large-scale investments in R + D are made by these joint ventures. This is unlikely where the ready availability of foreign technology is always assured by the foreign partners.

(c) Sources of External Co-operation

The external sources from which co-operation has flowed to Brazil are mostly the US and a few other developed market economies (DMEs) - West Germany, Switzerland, Japan, etc. - where the parent companies of most TNCs active in Brazil are located. One way of gauging the importance of each of these countries in the Brazilian industrialisation process is to compare their direct investments in the country. Table 2 (10) shows that the US alone accounts for about one third of all foreign direct investments in Brazil (considering that Panama is usually a "tax haven" for US-based TNCs). In 1971, the participation of the US, together with Panama, was 40.5 per cent, declining later to 33 per cent. In the same period, there was a marked increase in the shares of West Germany (from 11.4 to 13.9 per cent), Switzerland (from 6.6 to 10.9 per cent) and Japan (from 4.3 to 10.7 per cent). A certain diversification of sources of external co-operation appears to have occurred, although almost all of it from the DMEs.

The same trends are visible in the sources of Brazilian imports. Data in table 2 (11) show that the DMEs increased their share of all imports from 59.4 per cent in 1958, and 71.5 per cent in 1967 to 74.5 per cent in 1973. After 1974, this share decreased again, as a result of oil imports, reaching its lowest point in 1977 with only 53.4 per cent. The share of the Near East correspondingly increased from 11 per cent in 1973 to 27 per cent in 1977. There has been, however, some increase since 1976 of imports from other LAFTA countries, which may indicate an intensification of Brazil's trade relations with neighbouring countries.

Of greater interest to Brazil's co-operation with other Third World countries for industrialisation is her recent role as a supplier of technical assistance and even finance to some countries of Latin America and Africa. This trend appears to be a natural accompaniment of the growth of manufacturing exports, particularly of capital goods, that often require financing and technical assistance. Between 1968 and 1977, Brazilian exports of engineering products have multiplied in millions of US dollars from 13 to 426.6, of transport equipment from 3.9 to 492.1, and of electrical machinery from 5.9 to 281.0 (see table 2 (6)). Many of these exports have been destined for the rest of Latin America and Africa. Brazilian banks, above all the state-owned Banco do Brasil, have opened branches in some of these countries, and Brazilian engineering firms have entered bids for projects and consulting work in other less developed countries. Although all this is quite recent and still modest in magnitude, it points to a trend that is certain to grow in the future.

Table 2 (10): Country position of direct foreign investment and reinvestment, registered in Brazil (in US \$ million)

<u>Country</u>	<u>12/1971</u>	<u>6/1978</u>
USA	1,096.5	3,689.9
West Germany	331.4	1,697.9
Switzerland	191.9	1,331.5
Japan	124.9	1,312.1
Canada	294.2	667.5
UK	324.5 ^{a/}	605.9
France	205.5 ^{a/}	511.1
Panama	80.1	350.0
Netherlands	35.7	296.7
Sweden	57.7	246.5
TOTAL	2,911.5	12,230.8

a/ 1973

Source: Boletim do Banco Central do Brasil, November 1978.

Table 2 (11): Imports by source; Brazil, 1958, 1967, 1973-77

<u>Area/Country</u>	<u>1958</u>	<u>1967</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
<u>Developed Market Economies</u>							
EEC	11.3	23.4	27.6	24.9	25.0	20.3	19.3
USA	35.6	34.3	28.6	24.2	25.3	22.9	20.0
EFTA	6.2	6.3	6.1	4.4	5.6	4.8	3.9
Rest of West Europe	2.4	2.5	2.2	1.6	0.8 ^{a/}	0.8 ^{a/}	0.9 ^{a/}
Japan	2.5	3.0	7.9	8.6	9.1	7.0	7.0
Canada	1.4	1.1	1.8	3.3	1.7	2.5	2.2
Oceania	.	0.9	0.3	0.1	0.4 ^{b/}	0.1 ^{b/}	0.1 ^{b/}
Total	59.4	71.5	74.5	67.3	67.9	58.4	53.4
<u>Centrally Planned Economies</u>							
East Europe and Continental China	12.5	4.8	1.4	1.3	1.6	1.8	1.9
<u>Third World</u>							
LAFTA	18.1	13.6	8.7	7.1	5.9	9.5	11.2
Rest of Latin America	6.0	1.4	0.8	0.4	- ^{c/}	0.1 ^{c/}	- ^{c/}
Near East	3.5	7.0	11.0	11.1	19.0	24.6	27.0
Rest of Asia	0.1	0.3	0.8	1.0	0.5	0.5	0.6
Africa	0.4	1.3	2.6	5.0	4.1	3.7	4.6
Total	28.1	23.6	23.9	30.6	29.5	38.4	43.4
Others	-	-	-	-	1.0	1.4	1.3
TOTAL	100.0	99.9	99.8	99.2	100.0	100.0	100.0

a/ Only Spain.

b/ Only Australia.

c/ Only Central American Common Market.

Sources: 1958, 1967, 1973 and 1974: Anuário Estatístico do Brasil (IBGE).
1975, 1976 and 1977: Boletim do Banco Central, December 1978.

2.1.4 The Development Impact of Industrialisation

(i) Economic Growth

Industrialisation has been practically synonymous with economic development in Brazil. As has been seen (table 2 (2)), manufacturing expanded much faster than the economy as a whole after 1930, leading and shaping the growth of all other activities. Commercial agriculture, for instance, produced mainly for export before 1930. Since then, however, urbanisation, encouraged by industrialisation, expanded the domestic market for foodstuffs, and, as a consequence, the majority of agricultural produce is now destined for home consumption. Between 1948/50 and 1967/70, agricultural output grew 95 per cent, while agricultural exports grew only 12 per cent.^{1/}

Trade and finance also have been deeply affected by industrialisation. Until 1930, most trade consisted of primary exports and imports, and banks were chiefly engaged in financing these activities. Industrialisation through import substitution turned most trade and finance towards manufacturing. The extent to which this occurred may be evaluated by the fact that, while in 1930 only one third of the material product originated in manufacturing, this proportion reached more than four fifths in 1976 (see table 2 (2)). Since "tradables" are produced only by agriculture and industry, it is obvious that trade is becoming increasingly dependent on the expansion of manufacturing, the same holding true for finance. In 1975, total banking loans amounted to 303.6 billion cruzeiros, of which 103.3 billion went to industry, 83.8 billion to agricultural production, 23.7 billion to trade in manufactures, 14.3 billion to trade in agricultural produce, and the rest to governments and miscellaneous activities.^{2/}

(ii) Concentration of Economic Power

Capital concentration is one of the most widely recognised trends of capitalist industrialisation. It has taken place in Brazil, as everywhere else, as a result of the impact of technological progress on economies of scale, combined with other market, credit and political advantages associated with size. In Brazil, as a late-comer to industrialisation, capital concentration had had two sources: one is the normal outcome of competitive struggle in the market, the other being the establishment of new industries (usually through import substitution) which already demonstrate a higher degree of concentration than those in existence, thereby increasing the overall index of concentration. Although capital concentration should rise as a long-run trend, it is strongly affected by the business cycle. During the boom periods, many small enterprises are created and are able to survive, so that the level of concentration usually declines; during the slump, on the contrary, many small enterprises are ruined and disappear, thereby increasing the level of concentration.

^{1/} Paiva and others, 1973, Quadro II.2.

^{2/} IBOPE, 1976, Quadro 3.10.3.1.

In table 2 (12), concentration in Brazilian manufacture is measured by the output share of the four largest enterprises in each of 391 industrial sectors, in 1970 and in 1973. This was during the boom period of the business cycle that started in 1968 and ended in 1974. The share of the leading enterprises was 38 per cent in manufacturing as a whole in 1970 and declined to 35 per cent in 1973. Concentration was highest in the production of consumer durables (57 per cent in 1970 and 45 per cent in 1973) and least in the production of consumer non-durables (26 per cent in 1970 and 25 per cent in 1973). In table 2 (13), concentration is measured by the shares of the three largest enterprises in the total sales of the 20 largest enterprises of each industry, in 20 different manufacturing industries, in 1976 and 1977. There was not much change in concentration during this period. In the industries with the highest index of concentration, the sales share of the three leading enterprises declined in chemicals (from 76 to 75 per cent), in motor vehicles (from 73 to 69 per cent) and in beverages and tobacco (from 64 to 63 per cent), increasing only in office equipment (from 61 to 66 per cent). At the other end of least concentration, the sales of the three leading enterprises expanded in basic metals (from 28 to 31 per cent), food (from 32 to 36 per cent) and electric and electronic products (from 36 to 38 per cent), decreasing in car components (from 33 to 30 per cent) and in transport equipment (from 36 to 35 per cent), and remaining static in pharmaceuticals (28 per cent) and paper (30 per cent). The concentration index of table 2 (12) is more comprehensive than that of table 2 (13), showing that concentration is higher in consumer durables, intermediate and capital goods industries that were created during the later stages of industrialisation. The development of still newer industries, only just beginning, such as aircraft or computers, is likely to further increase the degree of concentration in Brazilian manufacture.

Table 2 (12): Percentage shares of output value of leading enterprises^{a/} by category of product; Brazil, 1970 and 1973

	<u>1970</u>	<u>1973</u>
Manufacturing	38	35
Non-durable consumer goods	26	25
Durable consumer goods	57	45
Intermediate goods	47	42
Capital goods	42	37

a/ Leading enterprises are the four largest in 391 manufacturing sectors.

Source: FINEP, 1978.

Table 2 (13): Percentage shares of sales of leading enterprises^{a/} by industry;
Brazil, 1976 and 1977

<u>Manufacturing industries</u>	<u>1976</u>	<u>1977</u>
<u>Consumption goods</u>		
Food	72	36
Textiles	48	53
Cleaning products	50	47
Beverages, tobacco	64	63
Printing, publishing	52	40
Wearing apparel	42	45
Office material	61	66
Pharmaceutical	28	28
Wood, furniture	42	43
<u>Intermediate goods</u>		
Chemicals, petrochemicals	76	75
Basic metal industries	28	31
Iron and steel	55	56
Plastics and rubber	54	55
Paper	30	30
Non-metallic minerals	40	43
<u>Capital goods</u>		
Motor vehicles	73	69
Electric and electronic products	36	38
Engineering	34	34
Car components	33	30
Transport equipment	36	35

a/ Leading enterprises are the three largest among the 20 largest of 20 manufacturing industries.

Source: Abriltec, 1978.

Concentration has not only increased during the two latest stages of industrialisation, but was mainly the result of the establishment of new types of enterprises - subsidiaries of TNCs and state enterprises. These forms of enterprise represent, from the start, monopolistic capital, while local private enterprises reach the monopolistic stage only at the end of a successful competitive struggle, which is why foreign-owned and state-owned firms tend to dominate the oligopolistic segment of Brazilian manufacture. This is clearly shown in table 2 (14): 50.1 per cent of the output of leading enterprises originates in foreign-owned enterprises, 33.3 per cent in state-owned ones and only 16.6 per cent in private local firms. Subsidiaries of TNCs, which are leading enterprises, account for almost one fifth of the output of manufacturing as a whole.

The share of foreign-owned enterprises in the output of leading enterprises is predominant in industries that produce durable consumer goods (84.9 per cent) and capital goods (62.9 per cent). Foreign leading enterprises account for 48.3 per cent of the total output of consumer durables, and for 26.4 per cent of the total output of capital goods by Brazilian manufacturing (see tables 2 (12) and 2 (14)). The share of local private leading enterprises predominates only in the production of consumer non-durables, while that of state-owned leading enterprises shares the leadership with foreign-owned companies in the production of intermediate goods.

Table 2 (14): Ownership pattern of leading enterprises^{a/}; Brazil, 1970 and 1977

1. Percentage shares in output (1970)

<u>Ownership</u>	<u>Output of</u>	
	<u>Leading enterprises</u>	<u>Brazilian manufacturing</u>
Foreign	50.1	19.0
Brazilian private	33.3	12.7
State	<u>16.6</u>	<u>6.3</u>
Total	100.0	38.0

2. Percentage shares in output by category of product (1970)

<u>Ownership</u>	<u>Non-durables</u>	<u>Durables</u>	<u>Intermediate goods</u>	<u>Capital goods</u>
Foreign	43.1	84.9	36.1	62.9
Brazilian Private	56.2	15.1	27.8	35.7
State	<u>0.7</u>	<u>-</u>	<u>36.1</u>	<u>1.4</u>
Total	100.0	100.0	100.0	100.0

3. Percentage shares in sales by category of product (1977)

<u>Ownership</u>	<u>Non-durables</u>	<u>Intermediate goods</u>	<u>Durables and capital goods</u>
Foreign	47.5	28.0	79.8
Brazilian Private	49.5	24.1	18.7
State	<u>3.0</u>	<u>47.9</u>	<u>1.5</u>
Total	100.0	100.0	100.0

a/ Leading enterprises: Parts 1 and 2: see table 2 (12), Part 3: see table 2 (13).

Sources: Parts 1 and 2: FINEP, 1978; Part 3: Abriltec, 1978.

While parts 2 and 3 of table 2 (14) are not strictly comparable, they give a rough idea of how ownership patterns among leading enterprises have changed between 1970 and 1977. It appears that TNCs have increased somewhat their share in the production of non-durable consumer goods. They already dominate the tobacco and pharmaceutical industries and are increasingly entering the production of foodstuffs, soaps, washing powder and detergents. In these markets, the launching of new products provides the subsidiaries of TNCs with competitive superiority over local private enterprises. In the production of intermediate goods, state enterprises seem to predominate, to the detriment of foreign-owned ones. In the petrochemical industry, one of the largest firms has passed recently from foreign to state ownership. These trends indicate that foreign capital maintains its hegemony in the production of durables and capital goods and is increasing its share in the oligopolistic segment of non-durables production, while only in intermediate goods production it is losing ground to state capital.

(iii) Impact on Local Innovation

In general terms, the impact of industrialisation on local innovation has been quite negative in Brazil. Industrialisation has been based, since its beginnings, on imported technology with very little scope left for autonomous technology development. The possibility for such development has, in fact, decreased as industrialisation has reached its later stages.

During the first stage (1930-1955) and the period that preceded it, industrial machinery and equipment were largely imported, but maintenance and repair services were provided by local shops, several of which were later able to produce replacement parts and even simpler machines. During the 1930s, the import of capital goods for industries, supposedly affected by over-production - such as textiles and footwear -, was prohibited. This was the only period when the Brazilian capital goods industry obtained effective protection against foreign competition. As a result, many of the repair shops developed into real factories, producing a whole range of machines for manufacturing, transport and agriculture. Several of them were "modernised" by their owners, who happened to be sons of coffee planters and were leaving schools of engineering during the 1920s and 1930s. The "Instituto de Pesquisas Tecnológicas" (IPT) of the "Escola Politécnica" in Sao Paulo gave valuable support to this "modernisation" effort during the 1930s and 1940s. In 1949, 62 engineers and scientists were already at work there. As a result of this long tradition, even now some of the leading enterprises in the capital goods sector continue to be Brazilian and privately-owned. In 1970, they accounted for 35.7 per cent of the output of all leading enterprises of this sector (see table 2 (14), Part 2).

The establishment of subsidiaries of TNCs in the production of capital goods started only during the second stage of industrialisation. Of a sample of 135 enterprises (74 Brazilian and 61 foreign-owned), 60 Brazilian and 24 foreign-owned were founded before 1950.^{1/} The big change took place in 1955, when most Brazilian manufacturers of capital goods began to rely on licences for technological assistance from abroad. This change in the behaviour of the enterprises was in response to a change of demand. Previously, much of the demand came from relatively unsophisticated family enterprises, with limited technological capability and a consequent preference for simpler equipment of the type produced by local manufacturers. The gradual growth of production of intermediate and durable consumer goods by large enterprises using modern technology engendered a new type of demand for capital goods. Although most of this demand was supplied by imports and through the establishment of subsidiaries of the foreign suppliers in Brazil, in some branches local enterprises decided to compete for the new demand, updating their technology with the help of foreign patents and know-how obtained through licensing. Of a sample of 27 Brazilian enterprises surveyed in 1972, no less than 20 were using imported technology.^{2/} These developments gradually limited the scope for local innovation to a level lower than that of 1955.

^{1/} Erber et al., 1974.

^{2/} Ibid, p. 32.

Many small and medium-sized enterprises continue to survive which generates a demand for simple capital goods that should not be very specialised. In such markets, local suppliers using local technology are able to predominate, even to the extent of exporting their products to other less industrialised countries, where their "inferior" technology best satisfies local conditions.

Even this local technology originated, in most cases, in the imitation of foreign machinery and equipment imported in the past. In effect, it is a technology that became obsolete in the industrialised countries and which is able to compete with modern technology only under conditions of industrial backwardness where, for instance, short production runs impede the use of more specialised equipment. Indigenous technology embodied in capital goods tends to engender, where it is put to use, low productivity of labour, which is profitable only where low-paid manpower is available. It would not appear particularly sensible to base the entire industrialisation effort of a country on such "inferior" technologies. Thus, the high costs of generating "superior" technology seem inescapable - superior in the sense of producing new, until now unknown but necessary, goods or services, or of lowering the production costs of already known products -, requiring investments that are unavoidably large, of long maturation and subject to high risks.

Brazil could only afford to make such large investments very selectively, in areas where existing technologies do not fulfil the country's needs in terms of its natural resources or the special needs of its people. There are indications that investments to develop new technology, mainly financed by state funds, are being stepped up, but most efforts to substitute the import of capital goods are still based on the use of foreign technology.

The perception of problems and needs that cannot be met by technologies developed outside Brazil depends on the existence of institutional channels through which such needs can be articulated. At present, almost the only channel available in Brazil is that of the market, reflecting primarily the needs of the high-income groups, given the highly skewed income distribution. These needs are very similar to those of the affluent populations of industrialised countries for whose fulfilment imported technologies seem quite appropriate.

(iv) Impact on the Level of Living

Industrialisation in Brazil has always had, as its background, a subsistence economy for a large part of the population, reflected in lower average GDP per capita levels (particularly in 1930). Industrialisation has been entirely urban since the beginning, affecting the rural population mainly by attracting it in growing numbers to the cities. Labour legislation, enacted during the 1930s and 1940s has been applicable only to urban wage-earners, with a partial extension to the rural areas during the 1960s and 1970s. Industrialisation nevertheless provided a sizable increase in urban employment, expanding

from 4.93 million in 1940, 6.82 million in 1950 (38.5 per cent of the labour force), to 10.49 million in 1960 (54 per cent) and 16.47 million in 1970 (57.2 per cent). While it is true that much of this employment has been "informal" in nature (domestic servants, street vendors, etc.), it represented "some" access to cash income, and to the consumption of industrial manufactures and "modern" services, such as schools and medical assistance.

Given the large rural population base ready to migrate to the cities, the supply of labour for capitalist industry was "infinite" in the Lewis terminology: unskilled labour could be obtained in almost any quantity without the need to pay more than the legal minimum wage. This was set at a very low level during the 1940s, increased moderately in real terms during the 1950s, declined sharply, in real terms, during the 1960s and more or less stagnated during the 1970s. The wage level as a whole remained quite low during the 1940s, but after 1955, the establishment of large enterprises, using relatively advanced technology, enhanced the demand for skilled labour as well as for technicians, managers and white collar workers in general. Although the level of schooling of the labour force also rose, there was a marked increase in wages and salaries for these categories of workers, so that the distribution of wage-incomes became increasingly uneven. A research study conducted on an annual basis in 15 large metallurgical firms located in the Centre-South region of Brazil, gave the following results: in 1966, skilled workers earned about 1.8 times the wages of unskilled workers, technicians about 2.4 times and managers about 7.3 times; in 1972, the corresponding multiples were 2.4 times, 3.6 times and 11.9 times.^{1/} It should be noted that the average wage of unskilled workers in 1972 was about twice the highest minimum wage according to the study, signifying that large enterprises paid somewhat better wages to unskilled workers than most other employers.

The concentration of wage-incomes continued after 1972, up to 1978, when, for the first time in 14 years, a wave of strikes in Sao Paulo reversed this trend, leading to larger wage increases for the lower-paid categories. The resumption of trade union activity since then may lead to the reduction of wage differentials which had become very large, particularly after 1964 when all collective wage bargaining was prohibited. It is widely recognised that in recent years, top-level executives in Brazil obtain salaries among the highest paid anywhere, comparable to those found in the US and West Germany, while unskilled workers are among the worst paid in the world. "In 1969, the average salary of a general manager of a middle or large enterprise in Sao Paulo or Rio de Janeiro was 65 times more than that of a labourer in the building industry in Sao Paulo; in 1972, 81 times larger; and in 1975, 90 times. Including the additional benefits received by the general manager, evaluated by Morris and Morgan only for 1975, the earnings of the general manager, if he was a local executive, was 144 times that of the labourer; in the case of a foreign executive, it was 162 times that of the labourer."^{2/} The evolution of non-wage incomes is less well-known. Fixed incomes were penalised by inflation until the

^{1/} Calculated from data cited in Bacha, 1976, table I, p. 120.

^{2/} Suplicy, 1977, p. 77.

mid-1960s, when indexing was extended to rents and several financial assets. Profits may have followed the usual cyclical pattern, rising very much during the boom and falling sharply in the slumps.

As a result of these various factors, the distribution of incomes has tended to become increasingly skewed. Data available since 1960 from Population Censuses (1960 and 1970) and from Current Population Sample Surveys - PNAD (1976) give evidence of this general trend (see table 2 (15)). The share of the poorest 50 per cent of the economically active population in total personal income declined from 17.71 per cent in 1960 to 14.91 per cent in 1970 and to 11.8 per cent in 1976. The share of the next 30 per cent declined as well, although not as sharply, while the share of the 15 per cent above increased slightly during this period. The group that increased its share most was that of the richest 5 per cent; it went up from 27.69 per cent in 1960 to 34.86 per cent in 1970 and to 39.0 per cent in 1976. Poverty, since 1960, has increased much more in relative than in absolute terms. The real incomes of the poorest 50 per cent increased 15.5 per cent in 1960-70 and 65.5 per cent in 1970-76, although the latter is exaggerated as a result of including non-monetary incomes in 1976 but not in 1970 and 1960. In any event, the real incomes of the richer layers increased much more. Those of the richest 5 per cent rose 75.4 per cent in 1960-70 and 133.7 per cent in 1970-76 (see table 2 (15)).

Table 2 (15): Income distribution in Brazil: 1960, 1970 and 1976

Economically active population	<u>Percentage shares in total personal income</u>		
	<u>1960</u>	<u>1970</u>	<u>1976</u>
The poorest 50 per cent	17.71	14.91	11.8
the next 30 per cent	27.92	22.85	21.2
the next 15 per cent	26.66	27.38	28.0
the richest 5 per cent	27.69	34.86	39.0
Total	100.00	100.00	100.0
	<u>Percentage growth of real incomes</u>		
	<u>1960-1970</u>	<u>1970-1976</u>	
The poorest 50 per cent	15.5	65.6	
the next 30 per cent	12.5	93.8	
the next 15 per cent	40.5	113.7	
the richest 5 per cent	75.4	133.7	
Average real income	36.9	110.3	

Source: Serra, 1978, tables 1 and 2.

In judging the effects of money incomes on poverty, the evolution of real incomes may be misleading. By deflating nominal incomes by a fixed number of prices, one assumes that the needs of the people have not changed during the period. But the essence of industrialisation is precisely the creation of new needs, from which the poor are not spared. Durable consumer goods, schooling, drugs and medical assistance are turned from luxuries into necessities, so that slowly-growing real incomes may be quite compatible with the increase of real and absolute deprivation. Much of Brazil's population has experienced this type of deprivation. Moreover, infant mortality, which was declining during the 1950s,

Table 2 (16): Nutrition level in the city of Sao Paulo: 1961/62, 1969/70 and 1971/72

Level of satisfaction of minimum needs (per cent)	Family income levels		
	Low	Middle	High
1961/62			
Calories	124.1	149.0	174.9
Proteins	123.8	158.6	198.4
1969/70			
Calories	91.1	100.6	109.6
Proteins	86.2	95.4	108.1
1971/72			
Calories	109.2	135.9	154.1
Proteins	121.5	170.9	209.3

Source: Alves and Vieira, 1978, table 4.

Advertising directed to a high-income clientele had developed in Brazil already at the beginning of this century. Magazines of politics and satire were widely read. O Malho, for instance, had a circulation of 40,000 in 1906. During the 1920s, the arrival of large American advertising enterprises gave a big impulse to magazine circulation. During the 1940s and the 1950s, O Cruzeiro completely dominated the market, reaching a circulation of 300,000 in 1948 and of 550,000 in 1952, most of it concentrated (about 70 per cent) in the cities of Rio de Janeiro and Sao Paulo, and reflecting the limited extent of the public with access to new products. However, as table 2 (17) shows, the most important mass media for advertising during the 1950s were newspapers and radio broadcasting, which were able to reach a much larger public (in 1958-60 some 500,000 radios were sold every year) in awakening an interest in not new, but "popular" mass-produced goods.

The data in table 2 (17) originate from different sources, so that the series 1950-60 and 1962-77 are not strictly comparable. It is obvious, however, that from the 1960s, television has emerged as the largest, single mass medium, now absorbing more than half the total advertising expenditure. The number of TV sets has increased rapidly in Brazil, from 170 thousand in 1955, and 760 thousand in 1960, to 2.2 million in 1965 and 4.9 million in 1970, reaching more than ten million in 1975.^{1/} It is quite clear that through the TV, advertisements now reach down much below the richest 5 per cent, who are the only ones to be able to really afford most of the goods and services placed on sale. 63 per cent of the households that have a family income of less than the equivalent of 2 minimum wages own TV sets.^{2/} It appears then that TV has replaced magazines as the major medium for disseminating new products in Brazil. The ten largest advertisers are: Gessy Lever (Unilever), Nestlé, Souza Cruz (TNC-cigarettes), Philip Morris, Moinho Santista (foodstuffs, textiles), Caderneta de Poupança Delfim (Savings), Ford, Rio Gráfica (publisher), Estrela

1/ Leite and Grottera, 1978.

2/ Prado and Grottera, 1978.

(toys) and Johnson and Johnson. It is not a surprise to find that six of the ten are TNCs, with all of them together spending 85 per cent of their advertisement funds through television.^{1/}

Table 2 (17): Percentage shares of different mass media in total advertisement expenditure^{a/}
Brazil, 1950-1955-1960-1962-1967-1972-1977

<u>Mass media</u>	<u>1950</u>	<u>1955</u>	<u>1960</u>	<u>1962</u>	<u>1967</u>	<u>1972</u>	<u>1977</u>
Radio	24	24	14	23.6	15.5	9.4	8.6
Magazines	10	11	11	27.1	22.0	16.3	12.4
Newspapers	39	36	33	18.1	14.5	21.8	20.2
Television	-	-	9	24.5	43.0	46.1	55.8
Outdoor/cinema	9	8	9	6.5	5.0	6.4	3.0
Others	18	29	24	-	-	-	-
Total	100	100	100	100.0	100.0	100.0	100.0

a/ Taken from: Anuários Brasileiros de Publicidade: 1950, 1955 and 1960.
J. Walter Thompson: 1962, 1967, 1972.
Grupo de Média: 1977.

Source: Leite and Grottera, 1978.

The Brazilian market, probably due to its relatively large size, seems to be a choice target for many of the new products developed by TNCs all over the world, from colour TV and pocket calculators to chartered flights and discotéque movies, records, tapes and clothing fashions. The young compete eagerly to wear and consume the latest, fashionable products. This has, of course, a negative effect on the local industries catering to indigenous mass culture. The public is quickly losing its taste for local culture, bringing in its turn an angry reaction from Brazilian artists, writers, movie producers, etc. In some cases the government has responded to their demands for protection and subsidies, as for instance, by limited assistance to Brazilian movies, but this has been quite inadequate for reversing the overall trend. Without an adequate technological base, it will be impossible for Brazilian firms to compete successfully with TNCs in the field of new products. The main problem lies, therefore, not at the distribution but at the production end of the process of industrialisation.

2.2 Future Trends in Industrialisation, Constraints and Policies

2.2.1 Discernible Trends in Industrialisation

Industrialisation in Brazil is now at a crossroads, not because the direction followed since 1968 is no longer economically viable, but because of the growing challenge to its social and political results. The military rule inaugurated in 1964 is being

1/ Leite and Grottera, 1978.

transformed, and whatever succeeds, it will have to take account of widespread dissatisfaction with the mounting concentration of incomes and benefits resulting from the present pattern of industrialisation.

The present pattern of Brazilian industrialisation was described earlier as a combination of the two patterns of "externally responsive" and "national goal-oriented" industrialisation. As possible future alternatives, this combination might be modified in two ways:

(a) By stressing the externally responsive aspects: with more incentives for non-traditional exports and for DFI, aimed at the export of manufactures; another feature of this alternative would involve the denationalisation of some state enterprises, which may be sold to foreign or local capital or, more likely, to a joint association of both. This would respond to the demands of entrepreneurial circles for an end to the "statization" of the economy.

(b) By stressing the nationalist aspects: with more incentives, credit and other forms of support for import substitution; in the establishment of new industries, priority would be given to local capital, private or public, or to some association of both; the participation of TNCs in joint ventures would be permitted only exceptionally, in order to obtain access to technology or to external markets. Other features of this alternative would include some income redistribution, aimed at not only the reduction of social injustice but also the enlargement of the domestic market; more funds would be devoted to the development of local technology, in order to make better use of locally available natural resources, such as that of the biomass for the production of energy; external trade would be oriented more towards other less developed countries, particularly oil exporters, which may have financial surpluses to invest in Brazil.

Various "people-centred" approaches to development that have been advocated recently in the literature do not seem to have much relevance for the conditions of Brazil. While it is difficult to oppose the notion of Human-Centered Development (HCD), all types of policies are always advocated on the ground that they will help to reduce poverty and unemployment. These are not distinguishing features of any model but common goals for all. What seems to distinguish HCD from others is "building on traditional technologies to generate new ones" and creating "much closer links between agriculture and industry, with industry decentralised and rural-based to a large degree." Such an alternative presupposes a social structure based on the village as an autonomous productive unit, which is the heritage of Far Eastern countries such as India and China. It was on the basis of such structures that Gandhi and Mao were able to develop their ideas of reviving and improving traditional techniques, and of combining agricultural and industrial production in small rural communities. In Brazil, however, it was the plantation, not the village, that was the main productive unit in the past. Brazil's villages are far from autonomous, and traditional techniques survive only to the extent that conditions for modern techniques (for instance, electrical energy) are lacking. There are, of course, intellectuals and scientists

above all those concerned with ecological problems, that support HCD views, but for obvious reasons they do not constitute a significant force in Brazil's political spectrum. Consequently, there is no future trend towards this model discernible in Brazil.

The option stressing nationalist aspects implies a limitation of dependence on foreign finance that also acts as its chief constraint. A policy favouring local capital, to the detriment of foreign investments, would probably provoke retaliation by international capital. Given the large size of Brazil's external debt, now amounting to over 40 billion dollars, difficulties in obtaining fresh loans would force the country to reduce imports, causing considerable damage to economic life. As may be seen from the data in table 2 (18), Brazilian imports are predominantly made up of capital goods, raw materials and semi-processed products. The rise of oil prices has sharply increased Brazil's external dependency, oil alone accounting, in 1977, for 30 per cent of all imports. Consumer goods, the only ones amenable to some reduction, make up less than 10 per cent of total imports. In such a situation, and with capital inflows covering over 40 per cent of external expenditure (see table 2 (4)), Brazil is very vulnerable to pressures from international financial powers.

Table 2 (18): Imports structure by category of goods; Brazil, 1964-1972 to 1977
(per cent)

<u>Category</u>	<u>1964-72</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>
Capital goods	36.36	35.46	25.37	32.97	30.18	27.05
Raw materials	20.66	19.35	28.56	29.57	36.19	37.76
Oil	8.32	9.78	20.23	21.80	27.08	29.96
Semi-processed products	29.80	31.39	36.30	28.36	25.36	25.85
Durable consumer goods	4.69	5.78	3.96	3.68	3.25	3.20
Non-durable consumer goods	7.40	6.64	4.99	4.25	4.88	6.06
Not specified	<u>1.09</u>	<u>1.38</u>	<u>0.82</u>	<u>1.17</u>	<u>0.14</u>	<u>0.08</u>
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00

Source: SEPLAN, 1978.

The possibility of switching over some of this dependency on external finance to oil-exporting nations has been explored by Brazil over the past few years. While previously, Brazil had been allied very closely with the US in its positions on international matters, she has been moving closer lately to other Third World countries, particularly in Arab and African regions. So far, the only concrete achievement may have been some increase in exports to them (see table 1 (6)) and prospects for quick pay-offs for this shift in policy remain uncertain. A united front of less developed countries against TNCs and international finance capital does not depend, for its success, on the actions of one country, and requires protracted negotiations and a joint political evolution of several developing countries over a long period of time.

On the other hand, the main international constraint to stressing the external orientation of Brazil's industrialisation is the semi-recession state of the world capitalist economy since 1974, with few indications of a favourable turnaround in the near future. Making Brazil even more dependent on the industrialised countries implies, in fact, that their lack of dynamism would hold down her rate of growth to a level considered too low to meet general expectations. Brazil's economy since 1974 is already growing less than is deemed necessary to uphold the level of employment, as a result of restrictive policies that are imposed on the country, partly by balance of payments problems. Given the present international economic conjuncture, TNCs are withdrawing from projected joint ventures, while exports to the industrialised countries meet increasing resistance.

Statements of the HCD path stress the satisfaction of basic human needs. Part of the difficulty of designing industrialisation policies to fit these goals lies in the absence of clarity in defining what are "basic needs". There is no evidence that these are merely minimum material needs, and that the great impoverished masses would be content with only enough food, shelter, clothing, etc. These, of course, constitute first necessities, together with schooling and health assistance, as long as they are deprived of their consumption. Consequently, it would be easy to say that HCD industrialisation would give top priority to the production of these goods and services, and less importance to the production of what might be regarded as "luxuries".

Some of the assumptions that underlie this debate may not hold true for countries such as Brazil. For instance, the existence of a very large amount of underemployment in rural areas as well as among the "marginal" urban population is assumed, together with the contention that this underemployment is due to capital-intensive techniques transferred to the country by TNCs. The only way to increase the production of basic goods and services, the argument goes, is to use simpler and less costly labour-intensive techniques, which would allow the rapid mobilisation of underemployed labour to fulfil the basic needs of those who are excluded from the modern (capitalist) sector.

The underemployment hypothesis has been proven false in a number of instances,^{1/} including Brazil, where in 1972-73, at the peak of the boom, unskilled labour generally became scarce, for agriculture as well as for public works and manufacturing. An analysis of employment during the "miracle" period (1968-1973) concludes: "The new entrants in the labour force, together with the manpower transferred from agriculture, were apparently absorbed by non-agricultural jobs without any significant increase in open unemployment or underemployment. The labour market seems to have been strained, considering the rise of female participation rates, the fall of underemployment and the relative decline of low-paid occupations, like that of domestic servants."^{2/} While there still exist labour

^{1/} See Singer, 1976 A.

^{2/} Morley, 1978, p. 348.

reserves that can be mobilised, they are far from being so large as to justify recourse to more labour-intensive techniques than those already in use. If production as a whole must be strongly expanded, then labour productivity must be enhanced rather than lowered by the revival of traditional technologies.

An alternative to changing the technologies in use would, of course, be to change the composition of output by reducing the production of luxury goods and transferring resources to the production of basic goods and services. That would have to be the outcome of a radical redistribution of income, limiting the excessive incomes of the small but highly privileged middle class. But, evidence from a wide range of family budget surveys shows that the income-elasticity of demand for basic goods is quite low, signifying that even poor people, as soon as they earn more, acquire luxury goods, be they TV sets, watches or ray-ban glasses. Such behaviour cannot be ascribed simply to the effects of publicity. It is well known that in countries that have broken away from capitalism and the "consumption society", there is a notable eagerness for fancy foreign goods. Poor people are no different from others in not remaining content with being simply fed, clothed and sheltered - they desire the good things of life, which take the form of luxuries, not only due to the general poverty of the country, but also due to the sharp inequality of incomes, restricting access to what may be called "cultural goods" to a small minority.

An appropriate industrialisation model for a country like Brazil would be a set of priorities that combines a vastly expanded output of basic goods and services with a selected range of front-line activities, from artistic creation and pure science to higher education, technological research and the production of "cultural goods". Such a model could not envisage self-sufficiency in a world where interdependency is growing in all fields and for all countries, but would seek instead to improve the position of Brazil as a participant in the international division of productive as well as intellectual labour.

As distinct from the typical HCD approach, basic needs should not be considered a set of needs given once-for-all, but as a continuously changing basket, with new needs becoming "basic" as the level of satisfaction of the remaining needs approaches saturation. The case of food serves as an illustration. While in the initial stages the highest priority should be assigned to the satisfaction of minimum protein-caloric requirements for all, attainment of this goal makes it desirable, subsequently, to improve the quality of the diet through increasing the choice of foodstuffs, this in turn becoming "a basic need". This implies that even while the initial goal has not been reached, the production of foods that do not belong to the basic diet, and which may be considered, therefore, as luxuries, should not be entirely discontinued in order not to lose the ability to produce them on a larger scale in the future.

Brazilian society may be considered now both half-developed and half-backward, with the "developed Brazil" possessing all kinds of intellectual and scientific capabilities as well as tastes and preferences that are common to industrialised countries. The fact

that these cultural capacities are enjoyed for the time being only by a small minority should not be a reason for calling a halt to their continuous production and reproduction. The goal should be instead to spread them to an ever-increasing part of the population so as to achieve equality at the highest possible level of development, instead of levelling the whole society at a degree of development attainable by all in the short run.

The division between intellectual and manual labour today appears to be the final and seemingly unconquerable source of social inequality. Historical experience demonstrates that the abolition of other differences, including that of property, does not lead to real equality as long as some enjoy a monopoly of knowledge and competence, and are therefore the only ones able to command and to direct, while all others have to listen and to obey. An appropriate industrialisation model must, therefore, have as its final goal not only the satisfaction of immediate basic needs but ensure the continuous development of productive forces to the point that the need for knowledge and competence can become basic, so that its satisfaction ceases to be a privilege of the few.

The division between intellectual and manual labour exists not only within nations but also between nations. Until recently, international specialisation was such that the industrialised countries produced manufactures and Third World countries only primary goods; now, however, manufactures are being increasingly exported by less developed countries, and the change is not limited by the type of manufacture exported by them. Products of light industries - processed food, textiles, etc. - are not the only ones to figure among these exports which also include the products of heavy industries, such as engineering, transport equipment and electrical machinery. In 1977, almost one third of all manufactures exported by Brazil originated in these three industries (see table 2 (6)). This does not mean, however, that all differences are disappearing between the ICs and DCs in international specialisation; the point simply is that the industrialised countries are switching over to a new type of specialisation, that of the production of knowledge, which may eventually constitute its main export.

A model where human resources are emphasised would allow Brazil to escape from this not altogether new division of labour, where it is destined to play the role of exporter of material goods - primary as well as manufactures - that would be paid for increasingly by the DMEs through licences to use patents, technical assistance, technology embodied in sophisticated machinery, research and educational services and so on. Although Brazil would have to import knowledge in any case, as even the most advanced countries do, it should be an important goal to gradually change the type of knowledge the country has to import. A comprehensive form of development in this field would mean that only "frontier knowledge" - the latest discoveries, and the most recent scientific and technological advances made in other countries - would have to be imported, while a certain share of such know-how is produced in the country and may be exported by it.

2.2.2 Government Policies and Linkages Abroad

As a short-hand for describing the three possible future trends of industrialisation discussed above for Brazil, they may be termed (a) the outward-looking trend (OT), (b) the inward-looking trend (IT) and (c) the social priorities trend (SPT). The implications for government policy and linkages abroad of these trends will be briefly discussed, with regard to finance, technology and trade.

(i) Finance

The outward-looking trend implies the continuous accumulation of foreign debt, possible only if Brazilian exports also grow at at least the same pace. This would require extending the present policy of subsidising exports although foreign pressure is being exerted on the government to eliminate subsidies gradually. As non-tariff restrictions on Brazilian imports are also eliminated progressively, in order to avoid an unbearable increase in the balance of payments deficit, it is probable that the government would devalue the cruzeiro, and incentives to foreign investors would be maintained.

The inward-looking trend implies the limitation and, as far as possible, the reduction of the external debt. As far as finances go, this would be achieved through more state control over foreign loans, including a limitation on their total. To reduce the outflow of convertible currency, taxes on remitted profits and royalties would be increased. Direct foreign investments would depend on governmental agreement, and a preference would be shown for joint ventures with local capital. Take-overs and mergers with locally-owned enterprises would be forbidden.

The social priorities trend implies complete state control over local and external financial operations, in order to force investments to conform to social priorities. Direct foreign investments would be allowed only in the form of joint ventures controlled by the state, in activities where access to foreign technology and/or foreign markets necessitates the participation of TNCs.

(ii) Technology

The outward-looking trend implies a policy of favouring the import of technology. TNCs would be encouraged to bring in new technology by means of tax and credit incentives, and technology acquisition would take place by inducing the formation of joint ventures in new industries. Funds for research and development would be used mainly to adapt foreign technologies to Brazilian conditions.

The inward-looking trend implies a policy of technology transfer in order to substitute imports. The indigenous capital goods industry would obtain government support in the form of credit, subsidies and preferences as suppliers to meet the demand from state-owned enterprises. Funds for research and development would be used mainly to solve problems of import substitution in capital goods.

The social priorities trend implies a policy of technology development in priority areas for the population majority, such as health, food production, or housing. The transfer of foreign technologies and the creation of new technologies would be combined in order to reach higher efficiency. The large increase in demand for basic goods and services would render possible economies of scale that should be explored by means of technological improvements. Payments for foreign technology may come to a halt as property rights over technology would not be recognised.

(iii) Trade

Trade policy implied by the outward-looking trend would favour the elimination of barriers to Brazilian manufacturing exports in industrialised countries. Exports would be stimulated by all the means available of financial, fiscal and investment policies. Imports would be freed from restrictions to the extent permitted by the situation of the balance of payments, but some protection of local industries against foreign competition would always be maintained. A free-trade policy of the type adopted recently by Chile is highly improbable in Brazil.

The inward-looking trend implies a trade policy favouring import substitution. This would signify, above all, complete protection against foreign competition for local industries. In order to expand exports as well as to save convertible currency, bilateral trade agreements would be sought, with centrally-planned economies and less developed countries. Economic integration schemes would be negotiated with less developed countries implementing similar nationalist policies. In general, Brazil would be in the vanguard of attempts to form a Third World united front in negotiations on trade regulations with the DMEs.

The social priorities trend entails total state control over foreign trade. Such control would be necessary to ensure that the capacity to import is fully utilised in accordance with social priorities. The sectoral allocation of resources would have to be placed under some form of government control; given the strategic importance of foreign resources, they could not be left to the vagaries of the market. As the Chilean experience under Allende has shown, even a relatively moderate redistribution of income is likely to engender explosive inflationary pressures, unless production and distribution are carefully controlled and adjusted to the new composition of demand. Economic planning would require that foreign trade be channelled mostly through bilateral or multilateral agreements. Such agreements could also be negotiated with TNCs, as demonstrated by recent events.

2.2.3 External Requirements

Whatever its future trend, industrialisation in Brazil will require interchange with other countries, above all with technologically advanced countries. In terms of finance, Brazil requires credit in order to service and amortise its huge foreign debt. Since its credit-worthiness depends on its exports, access to foreign markets is vital to Brazil's future.

Markets for Brazilian exports have strongly expanded in the DMEs (see tables 1 (6) and 2 (6)), but mounting unemployment in the latter has strengthened opposition to foreign competition from low-wage countries like Brazil. Except for such traditional commodities as coffee and cocoa, most Brazilian exports compete with locally manufactured products. It is doubtful, therefore, that exports of manufactures from Brazil would continue to expand in the DMEs as fast as they have done over the past ten years.

Given these prospects, the form taken by external co-operation will depend on the future trend of industrialisation in Brazil. If the outward-looking trend prevails, Brazil will need more foreign finance in order to be able to keep up the rate of imports and to meet financial obligations. An alternative way of expanding exports, in this case, would be a further increase of manufacturing exports by TNCs based in Brazil to other Third World markets.

If the inward-looking trend is followed, Brazil would need, above all, partners in the Third World, with whom bilateral or multilateral agreements could be negotiated, in order to expand trade and financial relations. The most desirable partners would be countries facing surplus in their balance of payments, who would require in turn capital goods and accompanying services of the type Brazil is able to produce as import substitutes.

If industrialisation follows the social priorities trend, the chief external requirement would also be for Third World partners implementing similar policies. In this case, ideological and political solidarity would be an important element in the economic relations to be established with these countries. Solidarity could well replace an initially missing complementarity of economic interests, which could later be deliberately fostered through co-ordinated plans of industrialisation. It hardly needs stressing that such conditions are not likely to be fulfilled easily in the foreseeable future.

Even if industrialisation were to follow either of the last two trends (IT or SPT), integration with other developing countries would not satisfy the need for technology and industrial inputs from DMEs. Such integration, however, would help to improve Brazil's capacity to import from industrialised countries, to the extent that she could increase her exports to some of her suppliers of raw materials (mainly oil). Moreover, integration could enlarge the base on which autonomous technology, in a few selected areas of production, could be developed.

2.2.4 The International System

Brazil now participates as a full member of institutions that bind together most capitalist nations of the world, such as the IMF, the World Bank and the GATT. Brazil participates as well in Third World institutions such as the Group of 77, but has refused thus far to take part in unions of raw-materials exporters - of the OPEC type -, which have been proposed, for instance, in the case of iron ore suppliers. As a large country, Brazil's need for regional integration is not very pressing. Although a member of LAFTA,

its participation has not been enthusiastic. The most visible impact of LAFTA on Brazilian industrialisation has been the opportunity for TNCs, based in Brazil and other Latinamerican countries, to engage in specialised lines of production in each of them, and to exchange components and finished products among them.

The international system, as it now exists, has contributed above all to the integration of Brazil in the world capitalist economy, not only as a supplier of primary goods and lately of some manufactures, but as a "frontier" for TNCs to accumulate capital and to invest. In addition, the shape of the international payments crisis has turned Brazil into a haven for speculative capital. Consequently, the ups and downs and general instability of the world economy, primarily in the DMEs, have had a magnified impact upon the Brazilian economy.

The way in which the international system is structured corresponds to the division of the world economy into three large blocks: the capitalist industrialised countries (DMEs), the centrally planned economies (CPEs), and the so-called Third World. Although Brazil belongs to this last group of countries, which is less homogeneous than the other two, she is more industrialised than most other developing countries, belonging to a category of semi-industrialised nations which includes Mexico and South Korea. Occupying an intermediate position in the international division of labour moulded by TNCs, Brazil increasingly plays the role of a "transmission gear" of technology and capital flows towards other developing countries. There is no grouping of countries in the international system which fits Brazil precisely, in the sense of formulating and advancing common interests. The creation of such a grouping, if it were possible, would evidently favour Brazil's industrialisation, helping to improve its bargaining position internationally.

2.2.5 The Development Impact of Future Industrialisation

The development impact of future industrialisation will likewise depend on the trend that will prevail in Brazil. The OT would probably maintain and perhaps even reinforce the present effects of industrialisation. Income distribution would remain skewed, since cheap labour is one of Brazil's main advantages in the world market as an exporter of manufactures, as well as constituting one of its chief attractions for foreign investors. The concentration of economic power in the hands of TNCs would be enhanced as a natural outcome of this type of industrialisation.

The IT would bring about a limited income redistribution, favouring the strata that are integrated already in the domestic market, since the enlargement of this market would be the primary objective of redistribution. Concentration of economic power would continue, but would favour local capital, whether state-owned or privately-owned.

The SPT would mean a profound redistribution of income, favouring groups at the margin of the market economy, as well as those who are already integrated as highly exploited manpower. Such a redistribution would be at the expense, to a significant

degree, of the standard of living of the high-income minority. Concentration of economic power would be increased from the point of view of centralisation of control over economic decisions, but would be decreased drastically in the sense that this control would be exercised by democratically elected officials and not any longer by those basically representing the owners of capital.

2.3 Recommendations for Co-operation

2.3.1 Assessment of External Co-operation

External co-operation has played an important role in Brazilian industrialisation, but has acted neither as its prime mover nor as the major factor that led to the benefits from industrialisation accruing to only a small minority of the population. The notion that capital-intensive technology, imported from abroad, generates little employment and consequently tends to concentrate incomes is false, at least for Brazil. Inequality is a historical heritage that characterises the Brazilian social structure since colonial times. Since then, the elite has been used to European consumption patterns. The import of industrialised goods was the main driving force for the export economy that prevailed in Brazil until 1930. Import substitution had to conform to market preferences, since the minority that could afford industrialised goods wanted them to conform as closely as possible to those previously imported. When they began to be manufactured in Brazil, these goods were already mass-produced in the industrialised countries, using technology that was capital-intensive. Only large scales of production make capital-intensive methods economically viable. The causation was, therefore, the other way around: pre-existent inequality moulded import substituting industrialisation, which entailed the use of capital-intensive techniques.

Capital-intensive technologies generate little employment in the last stage of production, in which final consumption goods and services are made, and more employment, relatively speaking, in the initial stages where capital goods are produced. Since capital goods in Brazil were, and still are to a large extent, imported, the total volume of employment in manufacturing has not been very large. However, the imported capital goods are paid for with Brazilian exports - and the employment generated through the latter compensates in some degree for the employment foregone in the capital goods sector.

There is no intrinsic reason for employment in the production of export goods to be inferior, from the point of view of income distribution, to that in the capital goods sector. This type of division of labour between industrialised countries and Brazil entails an unequal distribution of income among countries (to the detriment of Brazil), but the concentration of incomes within Brazil is neither directly nor indirectly a consequence of the first inequality.

The existing forms and channels of external co-operation, therefore, cannot be held directly responsible for the pattern followed by industrialisation in Brazil, but certainly do constitute obstacles to any change that is likely to affect vested interests. If industrialisation in Brazil were to follow its present course, only small changes of existing mechanisms might be needed. If, however, industrialisation were to help satisfy the basic needs of the majority of the population, then these forms and channels would have to be altered drastically.

The agents of international co-operation on which Brazil depends are clearly to be found in the DMEs: the governments of the United States and West Germany; TNCs based in the USA, FRG, Switzerland and Japan; and international organisations, such as the IMF and the World Bank, in the running of which these same governments exert a determining influence. At present, Brazil receives a sizable quantum of assistance from all these sources. If, however, a totally different set of policies were to be adopted, aimed at altering the balance of economic power in favour of local capital, or at submitting TNC subsidiaries to state control, there can be no doubt that external co-operation would be drastically reduced if not wholly stopped. That would mean, for instance, that Brazil would not obtain new loans and, as a result, its capacity to import would be heavily curtailed. Since more than nine tenths of all imports are made up of capital goods, raw materials and intermediate goods (see table 2 (18)), any sizable slashing of imports would vitally damage the economic life of the country, bringing the industrialisation process virtually to a halt for a period. The stoppage of finance would constitute just the first step, however. The dynamic segment of Brazilian manufacturing is now dominated by TNCs. If these firms were to stop exporting and investing, an industrial crisis would immediately occur. If placed under national control, they would lose their links with the parent company, through which they receive technical assistance and new technologies. Transfer of technology would cease as well for joint ventures in which TNCs participate, as well as for Brazilian firms that operate through foreign licensing and technical assistance. Finally, if external trade would be placed under state control and imports made to conform to social priorities, retaliation would probably follow in the form of restrictions against Brazilian exports. As the case of Cuba has shown, a complete embargo on trade is a possibility that cannot be excluded.

The main defect of the now existing forms and channels of international co-operation is that almost all of them are dominated by the same interests, with a stake in the present pattern of Brazilian industrialisation, despite the apparent variety of agents. As indicated in the first chapter, the example of Cuba demonstrated the potency of external sources. When their interests were placed in jeopardy by the Revolution, the country was practically expelled from all channels of international co-operation, on which it depended, consequently forcing Cuba to look for alternative sources of external co-operation, which in turn engendered their own forms of dependency.

What is needed by countries like Brazil, which are not only less developed but remain dependent on external co-operation, is the existence of mechanisms that are not dominated by one single set of interests. If such mechanisms could be created - to channel financial resources, direct investments and technology - the freedom of each country to choose its own path of industrialisation could be greatly enhanced.

2.3.2 Specific Recommendations

(i) Finance

An international banking network should be created to act as an intermediary between countries that wish to make bilateral or multilateral trade as well as financial agreements. Any loan should be linked with a trade contract through which the borrowing country can repay the debt, as well as service it with its exports. To avoid unilateral dependency, no accumulation of debts should be allowed. Debts to pay debts or re-negotiation of debts should be permitted only in truly exceptional cases.

There is no reason to assume that this banking network should be composed only of Third World countries. There is no natural bond of solidarity among them arising out of their common fate as developing countries. This institutional arrangement should be formed by all countries prepared to accept rules such as those sketched above, which aim to limit financial liabilities to the trading possibilities of each country, and which seems to be the only way to avoid a situation where (a) some countries become so financially dependent that their sovereignty is in danger and (b) an increasing outflow of interest payments changes the capacity to import of these countries.

(ii) Foreign Direct Investments

It would be desirable for Brazil to reach an agreement with other countries that also compete for foreign direct investments to harmonise their bargaining conditions towards the investors (mainly TNCs). Decision 24 of the Andean Pact (see chapter 1) could act as a model for such an agreement, which could cover issues such as profit remittances, capital repatriation, taxation, technology transfer and association with local firms. Again it may be that not only Third World countries would be interested in participating in the agreement, since other countries among the DMEs and CPEs also accept foreign investments. The agreed conditions should be considered minimal in the sense that each country would be free to add further restrictions, according to its general policy regarding private capital.

To administer such an agreement, an appropriate international organisation would be needed, the main task of which would be to monitor all foreign investments received by member countries. This body could also conduct negotiations with investors on behalf of member countries, if so desired. As the experience of the Andean Pact shows, such negotiations would be greatly facilitated if common industrialisation plans were established among member countries (see (iv) below).

(iii) Technology

The main problem concerning technology for Brazil is not that its acquisition is too expensive, nor that available technologies are inadequate to its needs, although the latter may become true if the structure of socially recognised needs were to change. It is that foreign technology is transferred to the country by TNC subsidiaries in such a manner that its further development can take place only in the parent company. To deal with this problem, it would not be enough to change the channels of technology transfer. Heavy investments in R + D would also be required. In order to lessen the costs, Brazil should co-operate with other less developed countries in technology development. In this case, co-operation would only be meaningful with other dependent countries, which do not monopolise technology creation through their own TNCs.

The fact that TNCs create and develop technologies to be used in a large number of countries demonstrates that the required R + D investments are too large to be confined to just one country, even in one as rich as the United States. Funds for R + D, to the extent that they are private, originate from profits earned by TNCs worldwide. To engage in such an effort, Brazil and other less developed countries would have to pool public funds and use them to train technologists to master and improve existing technologies in some selected areas. One promising area for common development is that of natural resources shared by several countries. For instance, countries sharing the Amazon Basin have begun joint efforts in this direction.

To encourage co-operation among developing countries on technology development, a centre for the collection and exchange of relevant information should be established. To make such a centre minimally effective, its activity should be focussed, for instance, on technologies required for the satisfaction of basic needs, on the assumption that there is a sufficient number of countries engaged in a process of industrialisation based on social priorities.

An advantage of common technology development is that many technologies may be appropriated through simple imitation and adaptation. No payments for technical assistance would have to be made and no direct foreign investment would have to be accepted.

(iv) Trade

Trade is the only area in which co-operation among dependent countries has been tried for some time and in different forms. Brazil, in order to become less dependent on trade (and finance) on the DMEs, would have to try and develop its exchanges more with the CPEs and DCs. To the extent that Brazil is more industrialised than most of the other DCs, it should be able to supply them with capital goods and technical assistance, partly as a conduit for TNCs but also, hopefully, as an independent generator of technology in her own right.

To enter into a systematic, more favourable, division of labour with other developing countries, Brazil would have to negotiate common plans of industrialisation with them. To enable it to do so with any chance of success, the establishment of the international banking network suggested in (i), of the organisation to monitor direct foreign investments, recommended in (ii) and of the centre of information on technology mentioned in (iii) would be decisive, since such plans can only be worked out with appropriate financial and technological support. Institutions created to formulate and implement common plans of industrialisation for several countries would have to rely on these bodies. The experience of the Andean Pact reveals that in the absence of independent sources of finance and technology, common industrialisation plans are liable either to fail or to depend to an excessive degree on external co-operation (chiefly direct investments by TNCs).

2.3.3 Major New Proposals

Among the recommendations outlined above, the only one that can claim some originality concerns finance (under (i)). This proposal is based on the Brazilian experience of external indebtedness. The country's debt appears to expand independently of any need to defer payments for imports. TNCs transfer funds to their Brazilian subsidiaries in the form of loans in currency, in order to be able later to remit profits in the form of interest payments, and thereby escape taxation on profits remitted abroad. Foreign and local banks transfer foreign savings to Brazil to take advantage of the high prevailing rates of interest in local markets, which is not a reflection of the scarcity of domestic savings but a consequence of the policy of the monetary authorities to restrict credit, aimed at combatting inflation. More foreign loans are used by Brazilian enterprises than are needed to pay for imports, generating a fast-growing outflow of interest payments - 2.1 billion US dollars in 1976 and 2.5 billion in 1977 - generating the need for further loans.

What is happening, therefore, is that Brazil is needlessly importing savings and financial services, while its economy is perfectly able to generate all the savings needed to support an adequate investment rate. The need for foreign finance results only from the country's inability to obtain all the foreign exchange required to pay for its imports of goods and services. Sooner or later, however, such imports have to be paid for by Brazilian labour, embodied in goods and services to be acquired by other countries. While it does make sense to "anticipate" imports that may help to generate later an increased stream of exports, the danger is that "later", conditions in the world market may change and the goods and services foreseen for export may become unsaleable at the projected prices. Consequently, it would help if each foreign loan were to be tied to a repayment scheme in kind, with prices fixed in advance for the duration of the loan.

An objection against such an arrangement might be that each financial contract would entail a bilateral trade agreement, making financial deals very cumbersome. The creation of an international banking network is suggested precisely in order to enable each country to enter multilateral financial deals without the danger of later not being able to repay its debt due to external circumstances. If, for example, Brazil borrows from the United

States in order to import machinery to produce goods for export to Venezuela, the international network could ensure that Venezuela is committed to buying the projected quantities of goods at prices that enable Brazil to meet its obligations towards the United States. Such a mechanism would function much better if Brazil and Venezuela were participants in a common plan of industrialisation with the loan serving as part of the effort to implement the plan.

It hardly needs stating that such loans could never be contracted entirely by private agents, signifying thereby a profound change in the workings of international as well as national capital markets. As they operate at present, capital markets bring even rapidly industrialising nations like Brazil to such a situation of external dependency that any far-reaching internal social reform would lead to a dangerous international confrontation. It is urgent, therefore, to devise ways of remedying the system as that such situations are avoided, or that their further aggravation is prevented.

2.3.4 Brazil as a Source of Financial and Technical Co-operation

The analysis has shown that Brazil is reaching a stage of industrialisation in which she can function as a significant source of financial and technical co-operation for other developing countries. Brazil is likely, however, to play this role in different ways, according to the particular trend its own industrialisation will follow. If the outward-looking trend prevails, the fact that Brazil is recognised as a Third World country may be the guise under which TNCs, working through subsidiaries, associates or joint ventures, will penetrate the economies of the assisted countries. There may be, in addition, some scope for the "autonomous" expansion of local firms into the Third World market, to sell capital goods and render technical services, but that would signify only that some sort of Brazilian-owned TNCs would develop, the behaviour of which would be indistinguishable from existing TNCs.

However, if industrialisation were to follow the social priorities trend, the financial and technical assistance rendered could be quite different. As recommended above, finance could be tied to trade agreements in order to ensure the planned repayment of debts, and technology transfer, rather than assume the form of Brazilian (or disguised TNC) direct investments, would adopt the form of joint development of technology, possibly within the context of common plans of industrialisation.

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INDUSTRIALISATION, ECONOMIC DEVELOPMENT AND
THE WORLD MILITARY ORDER

by

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CHAPTER 1: INTRODUCTION1.1 Political Power, Industrial Strength and Armaments Production

International relations in the post-war era have been based on power politics. The struggle for power has not taken place only between nations but also between regional economic and military blocs as well as between various types of non-governmental entities among which transnational corporations (TNCs) merit a special reference. In inter-state relations the practice and the doctrine of power politics has led to the reliance on military means to settle disputes. In the system of great powers, power politics have been enlarged by the extensive nuclear arms race and by the development of the doctrine of deterrence which is supposed to guarantee the peace, but which in practice tends continuously to undermine it. The use of military power is not limited to the relations between nation states but is in fact even more often applied within them, in internal wars in which foreign powers tend to intervene.

If the objective situation is as described above, it is no wonder that nations and their governments seek political power. It does not grow, however, out of a vacuum, but emerges instead from industrial plants and barrels of guns. A logical conclusion following from this premise is that the expansion of the political power of a regime requires the strengthening of its power base which, in turn, could be achieved by developing modern industries, including arms manufacturing, and the military establishment of the country.^{1/} At the same time, contrary reasoning has led to the fact that there have been constant efforts to change the world through disarmament and the restructuring of international economic relations along the direction in which integrative ties and peaceful methods would dominate.

The combination of international tension, the national pursuit of power, and the growing domestic capacity to manufacture weapons, normally coincide with the emergence of a military-industrial complex (MIC). The precise character of this complex is dependent upon the social system of the country concerned, its level of militarisation as well as its level of technological development. The phenomenon of a military-industrial complex is an outcome of the convergence of domestic forces advocating increasing militarisation and the international system based on power politics.

^{1/} In empirical studies on wars it has been argued that patterns of industrial and military growth inside countries correlate with initiation of war and that strong countries can fight far from home. It has been also observed that the accumulation of economic and military power raises a government's interest in, access to, and control over events in distant regions; see, e.g. Nazli Chouchri and Robert C. North, *Nations in Conflict*, New York, 1975, and Frederic S. Pearson, Kenneth E. Rudd and Robert A. Baumann, *Critical Analysis of Two System-Level Approaches to Study of War*, Peace Science Society (International), Papers, Vol. 27, 1977, pp. 59-66.

Besides the military bureaucracy and political decision-makers, a crucial component of the MIC is the system of arms manufacturers which may be either privately or publicly controlled, acting either simply in the domestic setting or transnationally as well. There is some evidence that a large proportion of the corporations involved in the military-industrial complex consists of big units and is responsible for extensive transnational activities.^{1/} In fact, one of the main tendencies in the armaments sector is its increasing degree of internationalisation which normally takes place under the aegis of transnational corporations. Further on in the paper, more detail is provided of various mechanisms through which the process of internationalisation manifests itself.

In practice, the process of internationalisation in the armaments sector means that the industrial base for producing armaments and military technology is spread primarily through private channels to new countries. Naturally there are also governmental arrangements to transfer military technology, but with the exception of socialist countries, TNCs are frequently involved in these transactions. The present international system is very unequal and hierarchical in its structure. This is largely a consequence of the historical process of accumulation which has resulted in the concentration of capital and technology in the rich areas of the world, in particular in the capitalist countries of the region. The asymmetric structure of the international system has inevitably led to a situation in which sophisticated armaments and military technology are transferred from the centre to the periphery. In other words, this asymmetry has to be combined with the notion of internationalisation to fully comprehend the basic structure in which arms and technology flow.

The armaments produced in industrialised countries are usually quite technology- and capital-intensive, and their production requires a modern industrial base which can be found rarely in a developing country. The assimilation of this type of military technology into the production structures of developing countries normally leads to considerable transformations within the latter. The transfer of arms and military technology thus contributes, through this transformation process, to the integration of peripheral economies into the prevailing international division of labour, dominated by centre nations and transnational corporations. The asymmetric nature of this integration signifies, in turn, a gradual growth of technological dependence of the recipient on the supplier. It is well-known that this type of dependence has deeper roots than, for example, trade dependence.

The Third World is gradually militarising. This tendency may be illustrated by the following information which refers to the distribution of military expenditures from 1957 to 1977 by five-year intervals at constant 1973 prices:^{2/}

^{1/} See Jonathan F. Galloway, *Multinational Corporations and Military-Industrial Linkages*, in Steven Rosen (ed.), *Testing the Theory of the Military-Industrial Complex*. Lexington, Mass., 1973, pp. 267-290. For critical remarks on Galloway's analysis, see Ulrich Albrecht, *Multinationale Konzerne und Rüstung*, in Dieter Senghaas and Ulrich Menzel (Hrsg.), *Multinationale Konzerne und Dritte Welt*, Frankfurt am Main, 1977, pp. 128-129.

^{2/} This information is calculated from figures provided by *World Armaments and Disarmament*, SIPRI Yearbook 1978, London 1978, pp. 142-143.

Table 1 (1): The worldwide distribution of military expenditures, 1957-1977, per cent

<u>Year</u>	<u>NATO</u>	<u>Warsaw Pact</u>	<u>Third World</u>	<u>Others</u>	<u>Total</u>
1957	64.1	21.9	5.5	8.5	100.0
1962	59.3	25.7	5.8	9.3	100.0
1967	57.7	23.2	7.5	11.6	100.0
1972	48.2	27.4	11.7	12.7	100.0
1977	45.1	26.2	16.4	12.3	100.0

The share of NATO of the world military expenditure has continuously decreased, while the share of the Warsaw Pact has grown slightly. The share of the Third World increased sharply during the early 1960s. The reason for this growth was probably the emergence of a large number of new, independent states which started to establish their own armies. For the latter half of the 1960s, the growth in military spending was due more to various regional arms races and, especially since about 1973, to massive transfers of arms and military technology which received a new impetus from the oil crisis.

The militarisation of the Third World is ascribable in large measure to the Middle East arms race. The share of the Middle East in global military expenditure in 1957 was 0.7 per cent, and that of all other Third World regions 4.8 per cent. By 1967, the respective figures had risen to 1.5 per cent and 6.0 per cent, and by 1977 to 6.5 per cent and 9.9 per cent. Military expenditure in the Middle East accounted, in other words, for 12.7 per cent of total Third World military expenditures in 1957, 20.0 per cent in 1967 and as much as 39.6 per cent in 1977. The Third World would not be disarmed without the Middle East, but it would be considerably less armed.

There are several indicators which show the degree of militarisation of the Third World. One of them, viz. the monetary value of military expenditures, has been applied above. Another important dimension is the physical transfer of military resources to the periphery of the international system. In this case, too, the qualitative dimension deserves special attention: the weapons technology currently transferred is much more lethal and causes more suffering among the civilian population than the earlier war technologies. An entirely new pattern of war has emerged as a consequence of the delivery of new conventional weapons to the Third World.

The main suppliers and the Third World recipients of major weapons in 1970-1976 will be illustrated in the following table.^{1/}

^{1/} World Armaments and Disarmament, SIPRI Yearbook 1978, op.cit., pp. 232-233.

Table 1 (2): Third World arms importers, 1970-1976

	<u>Total value of arms imports, \$ million</u>	<u>Share of the largest supplier, per cent</u>
Iran	4,900	USA 45
Egypt	2,864	USSR 89
Israel	2,785	USA 97
Syria	2,595	USSR 99
Libya	2,091	USSR 69
India	1,648	USSR 66
South Vietnam	1,475	USA 100
Iraq	1,122	USSR 97
Saudi Arabia	962	USA 70
North Vietnam	881	USSR 93
Pakistan	675	China 36
South Korea	662	USA 99
North Korea	621	USSR 99
Brazil	612	USA 33
Argentina	510	UK 28
TOTAL	24,303	

The figures very clearly indicate that countries in the Middle East and in the Persian Gulf are the main importers of weapons, while the United States and the Soviet Union are the leading suppliers. The hub of the international network of arms transfers is in this very set of countries. As to the absolute and relative figures given in the table one should recall that by also including smaller weapons and some components of military technology now excluded, the country magnitudes would be somewhat higher.

The qualitative dimension of the spread of weapons and arms technology to the Third World can be illustrated, for example, by a count of the number of developing countries which have acquired modern weapon systems:^{1/}

Table 1 (3): The spread of modern weapons to the Third World countries, 1950-1977

	<u>1950</u>	<u>1960</u>	<u>1970</u>	<u>1977</u>
Armoured fighting vehicles	1	29	64	85
Modern warships	4	26	56	67
New combat aircraft	-	1	29	48
Missile systems	-	6	25	42

Even in 1960 the Third World was relatively non-militarised if we use the countries possessing new combat aircraft and missile systems as a yardstick. The latter included Israel, Taiwan, Pakistan, South Africa, South Korea and the Philippines, i.e. those which were most intensively supported by the West. Since the early 1960s the situation has changed, however, conspicuously and also socialist countries have started to supply modern weapon systems to developing countries.

^{1/} World Armaments and Disarmament, SIPRI Yearbook 1978, op.cit., pp. 242-251.

1.2 The Third World as a Theatre of War

It is often maintained that the rising level of militarisation is connected with the increasing propensity to wage wars and become involved in other forms of conflict. In the Third World as a whole this statement held true from 1946 to 1965 when the military expenditures in Asia, Africa and Latin America increased roughly at the same pace as the growth of arms transfers, corresponding as well with the intensity and duration of wars waged in these three regions. Since the middle of the 1960s, the growth of military expenditures and arms transfers has continued, while the war involvement has gradually declined. This is especially apparent in Latin America and Subsaharan Africa and to a lesser extent in the Middle East. In Asia, the increase of all these military phenomena has continued almost unabated, although there, too, a slight decrease in the war involvement can be discerned in 1973-1976.^{1/}

A detailed study by Istvan Kende shows that in 1945-1974 a total of 116 wars took place, involving the territory of 69 countries and the armies of 81 countries. The total duration of these wars amounted to approximately 350 years which means that on an average 11.7 wars have been waged on every day of the last three decades. As pointed out above, the duration of wars constantly increased from the immediate post-war period until 1965-1969, and decreased somewhat since.^{2/}

The regional distribution of wars can be illustrated by the following table which partly relies on Kende's data on 116 wars and partly on the data by Eckhardt and Azar on 265 major conflicts in 1945-1975.^{3/}

Table 1 (4): Regional distribution of major conflicts during the post-war period

	<u>Duration/ Kende, %</u>	<u>Duration/ Eckhardt and Azar, %</u>	<u>Number of wars/ Kende</u>
Europe	3	5	5
Asia	41	43	34
Middle East	19	21	34
Black Africa	26	21	20
Latin America	11	10	23
TOTAL	100	100	116

^{1/} See Istvan Kende, *Dynamics of Wars, of Arms Trade and of Military Expenditure in the Third World, 1945-1976*. Instant Research on Peace and Violence (Tampere), Vol. 8, No.2, 1977, pp. 59-67. A corresponding observation on the temporal trend in military conflicts has been made by William Eckhardt and Edward Azar, *Major World Conflicts and Interventions, 1945 to 1975*, International Interactions, pp. 83-86.

^{2/} See Istvan Kende, *Thirty Years, Twenty-Six Days of Peace, One Hundred and Sixteen Wars, Co-existence*, Vol. 13, No. 2, 1976, pp. 126-143. A detailed set of information of 310 interstate conflicts has been compiled by Robert Lyle Butterworth, *Managing Interstate Conflict, 1945-1974: Data with Synopses*, Pittsburgh 1976.

^{3/} Kende, op.cit., 1976, pp. 130-131 and Eckhardt and Azar, op.cit., 1978, pp. 87-89.

Both of the sources used here provide fairly uniform information: practically all the major military conflicts have taken place in the Third World, where Asia and to a lesser extent the Middle East and Black Africa appear to have been the "hotspots". The wars in the post-World War II period are thus predominantly waged in the periphery of the international system, frequently under the influence of major powers which intervene in local wars in the Third World. Furthermore, it is interesting to note that 98 of the total 116 wars have been internal wars, though often waged in the conditions of external intervention, based on the rivalry between the government and the opposition rather than on ethnic or religious cleavages.^{1/}

^{1/} Kende, op.cit., 1976, pp. 134-140. Eckhardt and Azar, op.cit., 1978, pp. 83 and 95. Both question, however, the relative increase in civil anti-regime wars.

CHAPTER 2: PRODUCTION AND TRADE IN ARMS

2.1 Global Dimensions

The measurement of the global military effort is almost an impossible task; even the budgetary figures are artificial because the national military budgets are based on quite diverse criteria, and at least in some cases the exchange rates applied are imaginary rather than real. Naturally, rough estimates can be presented in spite of these problems. A conventional figure, almost invariably accepted, for the global military budget is US \$ 400 billion. The estimation of the funds devoted to weapon procurement is, if possible even more difficult, because the composition of national military budgets is seldom known for socialist or many developing countries. Even the figures relating to developed capitalist countries are often notoriously inaccurate. One solution would be to count the number of fighters, tanks, frigates, etc., but the huge technological differences between the military equipment in countries at different levels of economic development would amount to summing up apples and oranges.

These problems of measurement and evaluation were described already in 1962 by the consultative group of the UN Secretary General in the following manner: "The available data do not, however, make it possible to assess with the desired degree of accuracy the volume of resources that disarmament would actually release. For one thing, the existing estimates may not be comprehensive: some categories of military expenditure may be excluded. Further, there may be considerable inconsistency in the pricing of military output compared with the pricing of other production, as also in the relationship between the pay of armed forces and civilian wages and salaries. For these and other reasons it would be wrong to interpret the share of military expenditure in the total output as a precise measure of the real share of national resources allocated to military purposes."^{1/} These caveats and reservations are valid even today; in fact, the problems of measurement may even have increased in significance.

For these reasons it is possible to present only rough estimates of the global military efforts to produce and sell weapons and military technology. The most common measure of the global militarisation is the world military expenditure. Table 2 (1) provides information on this variable from 1957 to 1977; the absolute values are at constant 1973 prices and 1973 exchange rates.^{2/}

^{1/} See Basic Problems of Disarmament, Reports of the Secretary General, United Nations, New York, 1970, p. 9.

^{2/} World Armaments and Disarmament, SIPRI Yearbook 1978, op.cit., pp. 142-143.

Table 2 (1): World military expenditure in 1957-1977, billions of US dollars

	<u>1957</u>		<u>1967</u>		<u>1977</u>	
	<u>US \$ bn</u>	<u>%</u>	<u>US \$ bn</u>	<u>%</u>	<u>US \$ bn</u>	<u>%</u>
United States	69.6	44	100.4	41	76.4	28
Other NATO	29.8	19	39.0	16	47.0	17
Soviet Union	31.3	20	50.8	21	60.4	22
Other Warsaw Pact	2.7	2	5.3	2	11.3	4
Other Europe	3.2	2	4.4	2	6.0	2
China	9.8	7	23.5	10	27.5	10
Third World	8.6	6	18.1	8	45.0	17
TOTAL	155.0	100	241.5	100	273.6	100

The real military burden of the world has almost doubled from 1957 to 1977; the nominal growth has been naturally much more rapid. The present military budget of the world is at least 30 times higher at constant prices than it was in 1900. From the beginning of this century the real value of the world military budget was fairly stable until 1933 when it started to climb swiftly. The rapid real growth continued from the late 1940s until 1954 when a plateau was reached. The standstill in real growth continued until the early 1960s when a new wave of militarisation started in the international system.^{1/}

The table reveals the appreciable changes which have taken place in the global distribution of the military expenditure. The share of the United States has considerably decreased, especially after the Vietnam war, while the Soviet share has remained stable. The military budgets of the allies of the two great powers have been also relatively stable, although there is a certain shift, "burden-sharing" some might say, from the alliance leaders to smaller powers. The growth in the relative share has been most notable in the Third World countries and to a lesser extent in China. In the Third World, the Middle East and the Far East have been the regions most affected by the expensive military spending. The picture outlined above signifies that most of the military equipment and technology is produced and possessed by developed countries, although developing nations are continuously increasing their share, not only of the military expenditure but also of arms production.

It is estimated that the annual global procurement budget was in 1976 in the vicinity of \$ 80 billion, which amounted to 22 per cent of the world military expenditure. This sum is said to be twice the size of the combined budgets for education and health in all developing countries. By 1976, the annual procurement budget of \$ 80 billion acquired 124,000 tanks, 12,400 combat ships, 35,000 combat aircraft as well as nuclear weapons representing 50 billion tons of TNT equivalent.^{2/} It is apparent that with annual sales amounting to \$ 80 billion, the arms industry has become an important force in the economies of many countries and in particular in official budgetary decisions.

^{1/} See, e.g. Frank Barnaby, *The Scale of World Military Expenditures*, in Richard Jolly (ed.), *Disarmament and World Development*, Exeter 1978, p. 8.

^{2/} Ruth Leger Sivard, *World Military and Social Expenditures 1977*, Leesburg, Virginia, 1977, pp. 6-7.

The value of the total international transfer of arms and military technology is also difficult to estimate. The outcome depends on whether one counts only major weapons or small arms as well, whether only the arms transfers to developing countries or those to industrialised countries as well are taken into account, and, finally, how various weapon systems are valued.^{1/} Again, one solution to this problem is to count only the number of weapon systems transferred. In spite of the obvious problems involved in this procedure we shall start from this angle by looking at the number of various types of weapons exported by major suppliers to the Third World in 1971-1975:^{2/}

Table 2 (2): Exports of major weapons to the Third World, 1971-1975

	<u>USA</u>	<u>USSR</u>	<u>France</u>	<u>UK</u>	<u>Total</u>
<u>Land armaments:</u>					
- Tanks and self-propelled guns	3,560	5,220	440	1,105	10,325
- Artillery	785	2,550	80	5	3,420
- Armoured cars	5,240	4,190	780	225	10,435
<u>Naval craft:</u>					
- Major combatants	63	6	-	15	84
- Minor combatants	87	35	32	78	232
- Submarines	22	6	2	3	33
<u>Aircraft:</u>					
- Supersonic combat aircraft	593	1,385	275	-	2,235
- Subsonic aircraft	900	280	75	310	1,565
- Helicopters	460	380	265	45	1,150
<u>Missiles:</u>					
- Surface-to-air	1,850	3,950	240	590	6,630
- Air-to-air	2,155	-	50	50	2,255
- Air-to-surface	6,030	-	230	-	6,260

By simply summing up the totals in the table above we find that 44,624 major weapon systems have been exported to developing countries from the four major suppliers during the period 1971-1975 alone. About 60 per cent of them has gone to the Middle East, while the rest has been distributed fairly equally between Africa, Latin America and South Asia.

^{1/} On the methodological and technical problems related to the statistical data on arms transfers, see, e.g. Milton Leitenberg, Notes on the Diversion of Resources for Military Purposes in Developing Countries, Journal of Peace Research 2, 1976, pp. 112-114.

^{2/} See World Military Expenditures and Arms Transfers 1966-1975, ACDA, Washington, D.C., 1977, pp. 81-85.

There seems to be a certain, probably unintended, division of labour between the two main suppliers of weapons, viz. the United States and the Soviet Union. In the supply of land armaments the Soviet Union has, with the exception of armoured cars, an edge, while the United States is ahead in the export of naval craft. In the export of aircraft the Soviet Union has taken over the supersonic combat aircraft market, while the United States is dominating the markets of subsonic aircraft and helicopters. In the field of missiles the United States has almost a monopoly position in the export of air-launched missiles, while the Soviet Union has an edge in the supply of surface-to-air missiles.

The monetary value of exports of major weapons to the Third World countries is presented by three-year periods in the following table:^{1/}

Table 2 (3): The exports of major weapons to the Third World, millions of dollars at constant 1975 prices

	<u>1957-59</u>		<u>1966-68</u>		<u>1975-77</u>	
	<u>US \$ mn</u>	<u>%</u>	<u>US \$ mn</u>	<u>%</u>	<u>US \$ mn</u>	<u>%</u>
United States	1,276	29	1,749	23	9,660	44
Soviet Union	738	17	3,631	40	5,887	27
United Kingdom	943	21	690	9	1,914	9
France	328	8	496	7	2,391	10
China	483	11	69	1	206	1
Italy	75	2	88	1	383	2
Fed. Rep. of Germany	50	1	98	1	370	2
Other suppliers	423	11	638	9	968	5
TOTAL	4,316	100	7,459	100	20,811	100

The dominance of the two great powers in the arms export statistics stands out; they normally control more than two thirds of the total transfer of major weapons to the Third World. In addition, especially during the 1970s, they have been able to export also the most modern and hence the most destructive weapons because of their dominance in the military R + D effort. France and the United Kingdom, as well as China in the late 1950s, and to a lesser extent again in the early 1970s, belong to the second tier which presently accounts for one fifth of the international transfer of arms. No other country has achieved any notable role in the rapidly growing arms business, the real value of which has increased fivefold during the last twenty years.

A new tendency in international arms transactions is the emergence of additional suppliers to the market. Some developing countries have been able to develop their domestic arms production capacity to the level that they are able to launch their own campaigns to export weapons. Major arms exporters among less industrialised countries are Israel, which

^{1/} World Armaments and Disarmament, SIPRI Yearbook 1978, op.cit., pp. 256-257, see also p. 226.

supplied in 1970-76 arms worth \$ 174 million, Iran (\$ 160 million), Jordan (\$ 159 million), Libya (\$ 77 million), and Brazil (\$ 47 million). The share of these countries of the total exports of arms by Third World countries was as high as 85 per cent, which means that very few countries outside this group exported weapons to any noticeable extent.^{1/} (One should observe, however, that Jordan's exports did not consist of weapons produced domestically, but amounted simply to the retransfer of mainly British weapons and their components to South Africa.^{2/})

2.2 Industrialised Countries

It has been stated in the previous sections of this study that arms manufacturing is strongly concentrated in the industrialised countries of the world. It is again difficult to provide any exact figures on the extent of arms manufacturing in the countries of North America, Western Europe and Eastern Europe. By utilising information on the relative share of the purchases of military equipment, and on the total military budgets, approximate values for the total military purchases in NATO countries may be derived. In 1972, the total purchases were (at constant 1973 prices) \$ 22.3 billion, in 1974 \$ 18.4 billion and in 1977 \$ 21.0 billion. The decline is probably due to the end of the Vietnam war and the consequent decrease in US military production. This is shown by the fact that in 1972 the US purchases were \$ 17.8 billion, in 1974 only \$ 14.0 billion, but increased once again to \$ 15.9 billion in 1977. The same tendency appears in the purchase budgets of other NATO members - varying from \$ 4.5 billion, through \$ 4.4 billion to \$ 5.5 billion - which indicates that military production has again started to climb in NATO countries.

The role of arms manufacturing in the most important sectors of the economy may be illustrated by simply relating the military output to the total output. The following table contains such information:^{3/}

Table 2 (4): The military share of the total annual output in selected sectors in the United Kingdom, France and the Federal Republic of Germany in 1968-69
(millions of dollars)

<u>Industry</u>	<u>United Kingdom</u>		<u>France</u>		<u>FRG</u>	
	<u>Military output</u>	<u>Share per cent</u>	<u>Military output</u>	<u>Share per cent</u>	<u>Military output</u>	<u>Share per cent</u>
Airframes, aero-engines, missiles	815	53	540	46	275	70-80
Shipbuilding	396	34	18	4	72	5-10
Motor vehicles	104	2	72	1	140	5-10
Electronics	600	9	396	45	317	5-10
Others	246	n.a.	162	n.a.	322	n.a.

1/ World Armaments and Disarmament, SIPRI Yearbook 1978, op.cit., pp. 227-229.

2/ See, e.g. Zdenek Cervenka, Southern Africa: The Military Equation, Africa, No. 57, May 1976, p. 22.

3/ See Report on European Armaments Procurement Co-operation, European Parliament, Political Affairs Committee, Document 83/78, 8 May 1978, p. 41.

One may observe from the table above that the production of airframes, aero-engines and missiles is, in absolute terms, the most important single sector in total military production. For obvious reasons this sector is also in relative terms the most militarised industry. Hence special attention should be paid to the aircraft industry, although one should not neglect the electronics sector in which the military component is surprisingly large in absolute terms.

The dominant position of the procurement of aircraft and missiles can be also documented by the US data which show that their share of the total military procurement was 50.8 per cent in the fiscal year 1971 and 52.4 per cent in 1975. The share of military electronics was on the other hand lower than expected; 6.1 per cent in 1971 and 5.6 per cent in 1975.^{1/} Some characteristics of the aerospace industry in the United States and in Western Europe have been compiled in the following table in order to illustrate the relative significance of this sector in the national economy in general.

Table 2 (5): Aerospace industry in the West, 1973

	Total sales (millions of US dollars)	Labour force (thousands)	Share of GNP (per cent)	Share of labour force in manufacturing in- dustry (per cent)
United States	23,780	948	1.8	5.1
France	2,330	106	1.0	1.8
United Kingdom	2,290	206	1.1	2.7
FRG	1,400	53	0.4	0.7
Italy	600	30	0.4	1.3
Sweden	390	17	0.8	1.9
Holland	190	7	0.3	0.7
Belgium	100	4	0.2	0.4

The aerospace industry of the West is strongly dominated by a handful of big corporations such as Northrop, Lockheed, Boeing, Grumman and McDonnell-Douglas in the United States and SNIAS, Dassault-Breguet, British Aircraft Corporation, VFW/Fokker, MBB, Hawker-Siddeley, Dornier and Saab-Scania in Western Europe. The degree of concentration can be indicated by the fact that in the European Community three leading aerospace firms accounted for more than one fourth of the total employment in the industry, while the share of six leading corporations was more than 40 per cent.^{2/}

1/ Data originate in Economic and Social Consequences of the Armament Race and its Extremely Harmful Effects on World Peace and Security, Report of the Secretary General, United Nations, A/32/38/Add. 1, 12 September 1977, p. 138.

2/ See Manne Wångborg, The Use of Labour and Industry for Military Purposes: Some Figures, in Peter Wallensteen (ed.), Experiences in Disarmament. On Conversion of Military Industry and Closing of Military Bases, Uppsala 1978, pp. 168-169.

The employment impact of armaments production has long been of concern to the policy makers. For instance, during the 1970s in the United States, employment in the aircraft industry declined after a peak of 850,000 jobs (during the Vietnam war in 1968-70) to little more than 500,000. In particular, states such as California where the aerospace industries have provided as much as 37 per cent of all manufactures, the problem reached crisis proportions. Total public military employment in the US amounted to nearly 4 million in 1970, added to 2.4 million workers employed in the private military sector. If particular industries are observed, the sharp drop of employment in the aircraft, electronics and ordnance industries was clearly seen between 1968 and 1974. National military budgets provided some 60 million people with employment worldwide in 1976 according to Ruth Sivard (22 million as regular troops, 10 million as paramilitary personnel and associated civilians numbering 25.30 million).^{1/} An alternative estimate by ACDA of the armed forces strength in industrialised and developing countries is given in the following table:^{2/}

Table 2 (6): The strength of armed forces, 1966-1975, millions

	<u>1966</u>	<u>1969</u>	<u>1972</u>	<u>1975</u>
Developed countries	11.1	11.8	11.0	11.0
Developing countries	11.6	13.0	14.7	15.5
TOTAL	22.7	24.8	25.7	26.5

This shows the clear growth of members in the developing countries in accordance with the relative growth of military expenditures although as a percentage of total population the proportion in developing countries was much smaller even in 1975 (0.4 per cent against 1 per cent). As a share of total employment, military employment in the US has declined from 6.4 per cent in 1955 to 3.7 per cent in 1975, and as a share of total federal employment from nearly 80 per cent to 65 per cent. If the multiplier effects of military expenditure are taken into account, every tenth person employed in the US has been directly dependent on arms manufacture.

Since the skills required in arms manufacture are specialised and technology-intensive, and military production itself is research-intensive (with the ratio of research and development to production as high as 50 per cent),^{3/} much more employment is generated by equivalent investment in civilian industry.^{4/} Moreover, military expenditures have an opportunity

^{1/} Sivard, op.cit., 1977, pp. 6-8.

^{2/} See World Military Expenditures..., op.cit., 1977, p. 14.

^{3/} Jacques S. Gansler, Let's Change the Way the Pentagon Does Business, Harvard Business Review 3, 1977, p. 113. Gansler is the Deputy Assistant Secretary of Defense in the US Department of Defense.

^{4/} See, e.g. Jobs and Military Spending, Priorities, June 1976, pp. 1-12; Michael Edelsteing, The Economic Impact of Military Spending, Council on Economic Priorities, New York 1977; Marion Andersson, The Empty Pok Barrel; Unemployment and the Pentagon Budget, Lansing, Michigan 1978; and Guido Grünerwald, Abrüstung und Arbeitsplatzsicherung. Zur Diskussion über Rüstungskonversion und Arbeitslosigkeit; Blätter für deutsche und internationale Politik 6, 1978, pp. 657-680.

cost in terms of domestic investment and R + D. Decline in the rate of innovation and economic productivity leads in turn to greater imports and capital outflows.^{1/ 2/}

The USA and the Soviet Union account for the great majority of international transfers of conventional arms, followed by France, UK, FRG and Italy. For the first two, arms exports as a proportion of total exports in the period 1968-1975 ranged from 4.3 per cent to 8.4 per cent and 7.8 per cent to 15.8 per cent, respectively. The West European countries demonstrate much lower percentages. National motives for these arms exports tend to differ according to the economic systems of the exporters. Soviet arms exports appear to be linked more to supply factors in the Soviet economy related to her five-year plan timetable than to demand factors in the purchasing countries. According to Hutchings,^{3/} arms deliveries to the Third World rise sharply in the second year of the five-year plan, preceding the increase in military expenditure by one year. Checinsky^{4/} argues furthermore that the Soviet Union engages in a surplus "buffer" production of armaments in order to enhance the long-term productive capacity of the industry. However, economic pressures to export arms appear to be stronger in the case of the major capitalist countries where the "cost-crisis" for the principal arms producers in recent years has increased the urge to export. Intense competition to increase their share of the market has led to individual producers resorting to all kinds of new arrangements for internationalising production including sub-contracting, joint ventures and the international licensing of production.^{5/} Specialisation and co-production of armaments among members of politics-military alliances, allowing weapons to be jointly marketed outside the region, also play an important role. The economic incentive to export arms is illustrated by the fact that in the United States the sales of military hardware to foreign destinations were two and one half times more profitable than the sales of the same equipment to the Department of Defense.^{6/}

As a final problem in this part of the analysis: the correlation between arms exports and the net disbursements of the official development assistance in the group of DAC countries may be explored briefly. The ratio of arms exports to development assistance was as follows (those countries in which the ratio has substantially increased in favour of arms exports are underlined):^{7/}

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- 1/ On these indirect effects see, e.g. Lloyd Dumas, *Economic Conversion, Productive Efficiency and Social Welfare*, *Peace Research Reviews* 3, 1977, pp. 26-28.
- 2/ *Economic and Social Consequences and the Armaments Race and its Extremely Harmful Effects on World Peace and Security*, Report of the Secretary General, United Nations, A/32/88, 12 August 1977, p. 47.
- 3/ See Raymond Hutchings, *Soviet Arms Exports to the Third World, A Pattern and its Implications*, *The World Today* 10, 1978, pp. 378-389. The Soviet military-technological bureaucracy is described, for example, in David Holloway, *Technology and Political Decisions in Soviet Armaments Policy*, *Journal of Peace Research* 4, 1974, pp. 257-259.
- 4/ See Michael Checinski, *The Cost of Armament Production and the Profitability of Armament Exports on Comecon Countries*, *Osteuropa Wirtschaft* 2, 1975, pp. 117-142, and Michael Checinski, *Structural Causes of Soviet Arms Exports*, *Osteuropa Wirtschaft* 3, 1977, pp. 169-184.
- 5/ For an analysis of the developments in arms economies of capitalist countries see, e.g. Raimo Väyrynen, *Transnational Corporations and Arms Transfers*, *Instant Research on Peace and Violence (Tampere)* 3-4, 1977, pp. 155-160.
- 6/ and 7/ see next page.

Table 2 (7): The ratio of arms exports to the official development assistance in DAC countries, 1970 and 1975

	<u>1970</u>	<u>1975</u>	<u>Difference</u>
<u>United States</u>	1.02	1.21	0.19
Canada	0.52	0.08	- 0.44
Fed. Rep. of Germany	0.32	0.15	- 0.17
France	0.20	0.24	0.04
<u>United Kingdom</u>	0.19	0.44	0.25
<u>Italy</u>	0.18	0.54	0.36
Japan	0.13	0.04	- 0.09
Sweden	0.11	0.07	- 0.04
<u>Switzerland</u>	0.07	0.56	0.49
<u>Belgium</u>	0.03	0.18	0.15
Australia	0.01	0.02	0.01
Netherlands	n.a.	0.10	n.a.
<u>Austria</u>	0.00	0.67	0.67
Finland	0.00	0.04	0.04
Norway	0.00	0.01	0.01
Denmark	0.00	0.00	0.00
New Zealand	0.00	0.00	0.00

The relationship between arms exports and official development assistance appears to be a function of the economic and military strength of each country, especially in 1970: the stronger the country, the more it puts emphasis on arms exports. In 1975 the same pattern holds true by and large, with two significant exceptions: Austria and Switzerland have notably switched their relative emphasis from development assistance to arms exports, while the Federal Republic of Germany, Australia and Japan devote more resources to official development assistance, in comparison with arms exports, than their absolute economic and military strength would lead one to believe.

2.3 Developing Countries

In developing countries it is practically speaking impossible to obtain any precise information on the total value of military production. In many countries, especially in Africa, it is almost negligible, while in some others it has been kept confidential. The present data base on the value of national military production simply do not allow any statistical summary of the share of military production of the total industrial output of Third World countries. Substitute measures have to be resorted to as a consequence. Military expenditure as a percentage of GNP has been often used for this purpose, but for several reasons - for example, a part of GNP cannot be in fact allocated freely by political decision makers - it is not the best possible solution.

^{6/} Gansler, op.cit., 1977, p. 113.

^{7/} The sources of data used in calculations are World Military Expenditures ..., op.cit., 1977, passim; and Development Co-operation. Efforts and Policies of the Members of the Development Assistance Committee, OECD, Paris, 1978, pp. 204-215.

To avoid problems concerning this measure, military expenditure may be also related to the state budget of the country concerned. A study which covered 93 developing countries produced the following overall result:^{1/}

Table 2 (8): The proportion of military expenditures of the state budgets of developing countries in 1974

<u>Range</u>	<u>Number of countries</u>	<u>Per cent</u>
More than 25%	22	23.7
20-25%	6	6.5
15-20%	9	9.5
10-15%	16	17.3
5-10%	22	23.6
0- 5%	18	19.4
TOTAL	93	100.0

The summary table above can be made more informative by listing the ten most and ten least militarised countries in the Third World:^{2/}

Table 2 (9): The share of military expenditures in the state budget and GNP, selected countries, 1974

<u>Country</u>	<u>Military expenditures as a percentage of</u>	
	<u>the state budget</u>	<u>GNP</u>
<u>10 most militarised countries of the Third World:</u>		
South Vietnam	74.1	15.7
Egypt	65.9	15.4
Democratic Yemen	57.8	10.5
Iran	55.2	13.6
Israel	49.8	30.5
Yemen	47.6	5.3
Oman	44.7	28.6
Taiwan	42.8	7.0
Laos	38.0	7.6
Syria	34.8	11.1
<u>10 least militarised countries of the Third World:</u>		
Jamaica	3.3	0.62
Niger	3.0	0.68
Mexico	2.0	0.88
Tobago	1.4	0.25
Barbados	1.2	0.38
Mauritius	1.1	0.13
Fiji	0.9	0.20
Lesotho	0.0	0.0
Gambia	0.0	0.0
Costa Rica	0.0	0.0
Botswana	0.0	0.0

1/ Milton Leitenberg and Nicole Ball, *The Military Expenditures of Less Developed Nations as a Proportion of their State Budgets: A Research Note*; *Bulletin of Peace Proposals* 4, 1977, pp. 310-315.

2/ *Ibid*, pp. 312-313, and *World Military Expenditures ...*, op.cit., 1977, *passim*.

The two measures applied give similar rank orders. In what follows, therefore, no distinction between these two rank orders will be made, although the share of the military expenditure in the total state budget will be emphasised. The list is interesting in at least one respect: with few exceptions all the countries on it are relatively small. This finding counters the hypothesis that the big size of a country somehow determines the degree of militarisation of her economy and public administration.

At first sight a differentiating factor between these two groups of countries is their dependence on the international division of labour, in the sense that the militarised countries are militarily more dependent on external centres of power. This holds true, however, only to a certain extent, because most of the less militarised countries are also in a position of external dependence and domination, although more in economic terms. It is also worth noting that with the partial exception of Israel, Egypt and Taiwan, the countries listed do not have any extensive domestic capacity to produce arms. The military needs of the militarised countries are normally met by imports of arms and military technology. In fact, the developing countries producing arms domestically are to be found in-between the two extremes of the table. This is largely due to the fact that they are on the large side, making it less likely for the share of military expenditures in the state budget to be as high.

In industrialised countries domestic arms production forms the skeleton of the national military establishment in spite of the fact that the armaments industry is rapidly internationalising. In developing countries the situation is quite different owing to the lack of capacity in most countries to produce major arms and military technology in domestic factories. The main exceptions to this rule are listed in the following table:^{1/}

Table 2 (10): The production of indigenously designed major weapons in the Third World, 1976

	<u>Main battle tank</u>	<u>Missiles</u>	<u>Aircraft</u>	<u>Naval craft</u>
India	x	x	x	x
South Africa	x	x	x	x
Israel	x	x	x	x
Brazil	-	x	x	x
Philippines	-	x	x	x
Taiwan	-	x	x	x
Argentina	-	-	x	x
Indonesia	-	-	x	x
Peru	-	-	x	x
Venezuela	-	-	x	x
Bangladesh	-	-	-	x
Kuwait	-	-	-	x
North Korea	-	-	-	x
Pakistan	-	-	-	x
Singapore	-	-	-	x

^{1/} World Armaments and Disarmament, SIPRI Yearbook 1977, Uppsala 1977, pp. 288-295.

According to this information a total of 15 countries of the Third World, many of them already relatively industrialised, are producing indigenously designed weapons systems. Three of them, viz. India, South Africa and Israel, have developed a full-fledged capacity in this field, while Brazil, the Philippines and Taiwan are in the same category with the exception of an indigenous design of a main battle tank.

Argentina, Indonesia, Peru and Venezuela are in the third category of domestic arms producers, with the potential for entry into the "club" after the design of an indigenous missile. On the basis of the data presented above, one may safely conclude that the domestic arms production is closely correlated with a relatively high level of industrial capacity.

In addition to the countries listed in the table above the following developing countries are involved in the domestic production of weapons under various license arrangements: Colombia, Egypt, Iran, South Korea and Mexico.^{1/} As there are 18 Third World countries in all carrying out the licensed production of weapons, one may safely state that most arms producers in the Third World are both designing indigenous arms and relying on foreign weapon systems and military technology. In fact, Kuwait and Bangladesh are the only countries among domestic arms producers which have not resorted to licensed production; this indicates the modest level of their efforts in this field, rather than providing evidence of their self-sufficiency in arms production.

Apart from industrial considerations one should also pay attention to political factors which may have fostered the decision to promote the policy of self-sufficiency in arms production. One such apparent motive is the application of an arms embargo, or the threat of an embargo, against the country concerned. This embargo may have been implemented by a single, but important supplier, or it may have been established as a collective measure, i.e. by the United Nations. In the list provided in the preceding table, Egypt, Israel, India, Pakistan and South Africa at least have been subjected during the 1960s or the 1970s to arms embargoes from their traditional suppliers.^{2/} All these countries form part of the group able to design indigenously at least some of the major

1/ World Armaments and Disarmament, SIPRI Yearbook 1977, op.cit., pp. 295-304. The origins of licenses provided to Third World countries to manufacture arms are described by the information below:

		<u>USA</u>	<u>FRANCE</u>	<u>UK</u>	<u>ITALY</u>	<u>FRG</u>	<u>USSR</u>
<u>Aircraft:</u>	1950-72	5	5	1	2	-	2
	1976	9	4	4	2	2	2
<u>Warships:</u>	1950-72	2	-	3	-	1	1
	1976	1	1	5	3	3	1
<u>Missiles:</u>	1950-72	-	1	-	-	1	1
	1976	2	2	2	-	2	1
<u>Armoured vehicles:</u>	1950-72	-	2	1	-	-	1
	1976	-	-	2	-	-	-

Sources of this table are *ibid*, loc.cit., and World Armaments and Disarmament, SIPRI Yearbook 1973, Uppsala 1973, pp. 346-347.

2/ This point is briefly mentioned in World Armaments and Disarmament, SIPRI Yearbook 1975, Uppsala 1975, p. 195.

weapon systems. Taiwan, too, has had reasons to believe, especially since the early 1970s, that the flow of weapons from the United States may not continue indefinitely. The case of South Africa is a good example, as a country which was subjected to a UN voluntary arms embargo in 1963 and to a mandatory embargo in November 1977. The interval was, however, so long that the regime was able to obtain, through various loopholes, considerable amounts of advanced military technology from abroad, both through purchases and through licensing agreements. When the mandatory arms embargo was finally implemented, South Africa, partly with the assistance of transnational corporations active in the country, had become so self-sufficient in the production of military equipment that the embargo was unable to have any major impact.

It was hinted earlier that the general industrial capacity of a developing country is a necessary precondition for initiating the domestic production of arms. Kennedy^{1/} assumed that defence production is strongly related to the metal trades, i.e. metal processing, metal fabrication and metal machining. He called the metal and engineering group the potential defence capacity, and studied the possible association of this capacity with any obvious differences between defence producers and defence importers in the Third World. He found that in the late 1960s there was a clear tendency for arms producers to have a larger proportion of their manufacturing capacity in the metal and machinery group than for the arms importers. In this sense industrialisation and arms production were found to be related to each other, although some small countries, such as the Dominican Republic, Cuba and El Salvador, had a large capacity for the production of small arms without having developed any significant metal manufacturing activity.

An essential question is the precise relationship between domestic arms production and progress in the industrialisation programme, as part of the more general relationship between the military effort and economic growth.

This might be the right context to explore a bit more deeply the connection between military expenditures and economic development in Third World countries. Attention will be paid more to the growth effect of military spending as opposed to the allocation effect which are, however, quite closely interrelated. A good starting point is the study by Kurt Rotschild who combines these aspects with the export-led growth models. His set of hypotheses states that high military expenditure reduces the availability of machinery and transport equipment for export which naturally leads to slower export growth and hence also to the slower growth rate of the economy. Rotschild studied empirically 14 developed capitalist countries, and was able to show that the high level of military spending prevented the strategy of export-led growth from being followed. The militarisation of the economy was thus detrimental from the standpoint of its growth.^{2/}

^{1/} See Gavin Kennedy, *The Military in the Third World*, London 1974, pp. 293-301.

^{2/} Kurt W. Rotschild, *Military Expenditure, Exports and Growth*, *Kyklos* 4, 1973, pp. 804-814. For a later study along the same lines, though placing more emphasis on the impact of the military expenditure on the domestic investment patterns, see Ron Smith, *Military Expenditure and the Economy*, in Dave Elliot et al., *Alternative Work for Military Industries*, London 1977, pp. 5-12.

The relationships between the variables mentioned above may be different in the group of developing countries. This is in fact the main result by Emile Benoit who concluded on the basis of an empirical examination of 44 developing countries during the period 1950-65 that the level of militarisation and the growth rate of the economy are positively correlated (although we have to bear in mind that the correlation coefficients estimated by Benoit were in general low and often statistically not significant).^{1/} Kennedy's analysis appears to indicate, in turn, that there is no linear relationship between the growth rate of GDP and the share of the military expenditure of GNP. A closer examination of his data reveals, however, that the average military burden is highest in those groups of countries which are either growing very rapidly or very slowly. There is a slight bias towards the finding that the more militarised countries have higher growth rates, or vice versa, thus partly supporting Benoit's findings. The examination of the relationship between the growth rate of GDP per capita and the share of GNP allocated to the military sphere failed to produce any unambiguous results.^{2/}

The quantitative approach aimed at determining statistically the development impact of military expenditures is strongly criticised in a case study of Iran. The author suggests that approaching "the question of socio-economic development from the perspective of military expenditures is a difficult and unrewarding task for a researcher, producing little in the way of relevant findings". Her own descriptive analysis comes to the conclusion that the military expenditures and arms imports have by and large had a beneficial impact on the security and socio-economic development of Iran because of the provision of training services, the inducement of attitudinal change, and the development of infrastructure and the industrial sector.^{3/} The author thus supports the overall conclusion presented by Benoit.

There are, however, many practical problems in the analysis carried out by Benoit; one of them is the possibility of spurious correlations. Both the growth rate of the economy and the degree of militarisation correlate positively with the foreign aid received and, to a lesser extent, with the level of domestic investment activity in developing countries. A more detailed analysis shows, furthermore, that developing countries can be in fact divided into three groups in this sort of examination. The first group includes those countries which are more militarised than the countries of the region on average, and which are growing rapidly, both in terms of military expenditures and economic resources (Brazil, Taiwan, Iran, Israel, the Republic of Korea, Libya, Saudi Arabia and Thailand). It is important to note that all these countries are either strongly dependent on the United States or otherwise depend on their oil resources.

^{1/} Emile Benoit, *Defence and Economic Growth in Developing Countries*, Lexington, Mass., 1973.

^{2/} See Gavin Kennedy, *op.cit.*, pp. 173-189.

^{3/} Stephanie Neuman, *Security, Military Expenditures and Socio-Economic Development: Reflections on Iran*, *Orbis* 3, 1978, pp. 569-594.

The second group encompasses those developing countries which are highly militarised and which are rapidly expanding their military establishment, but which have failed to ensure the growth of their economy. These countries - Kampuchea, Chad, Egypt, Jordan, Somalia, Zambia and both Vietnams - have a war economy because of their involvement in protracted military conflicts. The third group of countries finally includes those countries - e.g. Cuba, the Equatorial Guinea, India and Democratic Yemen - in which both the military expenditures and the economy are growing fairly slowly. In other words, there is no self-evident relationship between the economic growth and militarisation in the Third World.^{1/} The conclusions are made even more ambiguous if we apply other indicators - such as inflation, employment and the standard of living - in addition to the mere growth rate of the economy.^{2/}

Mary Kaldor has divided military establishments in the developing countries into two main categories: pre-industrial and industrial armies. The structure of the pre-industrial army - which she has divided in another connection into precolonial and colonial models - fits in with the existing social formation, while the industrial armies, which belong to the post-colonial era, base their power on technology and policies imported from the centre nations. The social function of the industrial armies is to safeguard the existing social structure which favours the alliance between the urban centres, emerging industrial capitalists and foreign interests. This alliance aims at exploiting and expropriating the produce of the poor in the rural areas in developing countries.^{3/}

One may surmise that Benoit's observation on the positive relationship between the expenditure on arms and the growth rate of the economy is by and large valid for countries in which the industrial armies dominate. If this hypothesis is correct it means simply that the denationalised elites in developing countries are allocating money for military purposes, remain dependent on economic aid and military imports from the patron countries, but have been also able to ensure the relatively rapid growth of the economy. This may mean an increase in per capita income, accompanied by a growing gap between the urban elites and the poor in the rural areas.

This observation may be extended by relating it to two different models of industrialisation, viz. import substitution and export promotion. The situation appears to be that at first countries following policies of import-substituting industrialisation started to develop their arms industries and gradually those favouring export-promoting industriali-

^{1/} See Mary Kaldor, *The Military in Development*, *World Development* 6, 1976, pp. 459-482.

^{2/} See, e.g. Ulrich Albrecht, Dieter Ernst, Peter Lock and Herbert Wulf, *Rüstung und Unterentwicklung*, Reinbek bei Hamburg, 1976, pp. 62-73.

^{3/} Kaldor, *op.cit.*, 1976, pp. 468-469 and 471-472 and Mary Kaldor, *The Role of Arms in Capitalist Economies: The Process of Overdevelopment and Underdevelopment*, in David Carlton and Carlo Schaerf (eds.), *Arms Control and Technological Innovation*, London, 1977, pp. 332-340. The relationships between the social structure, the mode of production and the nature of armies is analysed in a detailed manner by Robin Luckham *Militarism: Force, Class and International Conflict*, *IDS Bulletin* 1, 1977, pp. 19-32.

sation followed suit.^{1/} This order may be ascribed to the underlying forces of import substitution, bringing about a symbiosis of the state with local and international capital. This naturally applies as well to the production of military hardware. In export-promoting industrialisation the role of the state and foreign capital is less interventionist: hence their integration with local capital to produce arms took place more slowly than in the import substitution case.^{2/}

Kaldor arrives at the conclusion that expenditures on arms and the growth rate of the economy are in certain types of systems positively correlated not as a result of modernisation (as advanced by Benoit), but through the forced savings, exploitation and repression which increase the surplus product available for accumulation. The economic growth achieved under these conditions tends to increase further the degree of inequality prevailing in the country.^{3/} The distinction between military and civilian regimes is not very useful in this connection as their economic behaviour is not significantly different.^{4/}

The relationships between military expenditures and economic development can be analysed also in terms of opportunity costs. The existence of high opportunity costs in the most militarised regions of the world is most apparent, as in the Middle East, where military expenditures have taken away substantial human and material resources from underdeveloped civilian sectors.^{5/} The sacrifices are, to put it bluntly, determined by the level of militarisation in the country rather than by its level of development or political system.^{6/}

The employment effects of military production are less pronounced in developing countries than in the industrialised part of the world, for the simple reason that far fewer weapons systems are produced in a small number of countries. India is an example at one end because of her extensive, completely state-owned and -managed, complex of arms manufacturing which consists of some three dozen ordnance factories as well as nine defence undertakings. Both

^{1/} For a relatively early account of these two models of industrialisation, see K.B. Griffin and J.L. Enos, *Planning Development*, London, 1970, pp. 141-153. India, Brazil and South Africa are examples of countries, though in many respects different, which have developed their domestic arms programmes under the aegis of the import-substitution model, while Taiwan, South Korea and Singapore are examples of the export-promotion model.

^{2/} Luckham, *op.cit.*, 1977, p. 29.

^{3/} Mary Kaldor, Reply. *World Development* 8, 1977, p. 763. This comment is a reply to the criticism presented by Alice H. Amsden, Kaldor's "The Military in Development" - A Comment. *World Development* 8, 1977, pp. 753-761.

^{4/} R.D. McKinley and A.S. Cohen, *The Economic Performance of Military Regimes: A Cross-National Aggregate Study*; *British Journal of Political Science* 2, 1976, pp. 291-331, and Miles Wolpin, *Militarism, Socialism and Civilian Rule in the Third World: A Comparison of Development Costs and Benefits*, *Instant Research on Peace and Violence (Tampere)* 3-4, 1977, pp. 105-133.

^{5/} Fred M. Gottheil, *An Economic Assessment of the Military Burden in the Middle East, 1960-1980*, *Journal of Conflict Resolution* 3, 1974, pp. 502-513.

^{6/} See David Dabelko and James M. McCormick, *Opportunity Costs of Defence: Some Cross-National Evidence*, *Journal of Peace Research* 2, 1977, pp. 145-154.

these categories of arms manufacturers, of which the latter enjoy a somewhat higher degree of autonomy - employ about 100,000 workers.^{1/} The domestic production of arms also requires large-scale use of engineers and skilled workers in the planning, development, testing and production of weapons systems. It has been estimated that the production of five HF-24 fighters per month, as part of the total production series of 100 aircraft, requires a labour force of 2040 workers, while the indigenous development of this Indian fighter has necessitated the allocation of 5.1 million engineer hours for research and development.^{2/}

In addition to military R + D, and people involved in production, the running of the military establishment requires the prior existence of an intermediate category of technicians who can repair, service, and maintain the military equipment. Where equipment includes armoured vehicles, warships and aircraft, the figures below indicate the maintenance man-years which are needed in total by each category of weapons system:^{3/}

Table 2 (11): Maintenance man-years needed for armoured vehicles, warships and aircraft in 1970

	Armoured vehicles	Warships	Aircraft	Total
Egypt	3,075	634	5,466	9,175
India	2,175	717	4,632	7,524
North Korea	1,600	658	4,110	6,368
Brazil	150	849	5,142	6,141
Israel	2,120	187	2,976	5,283
Argentina	90	705	3,672	4,467
Pakistan	1,455	423	2,400	4,278
Iran	1,995	319	1,782	4,096
Taiwan	n.a.	1,176	2,772	3,948
Iraq	1,445	122	1,800	3,367
Syria	1,225	143	1,416	2,784
Indonesia	n.a.	1,503	1,272	2,775

The figures given above are rough estimates which provide an order of magnitude for the absorption of skilled manpower in certain developing countries. The maintenance of aircraft requires most of the manpower (62 per cent) for the dozen countries listed above. Since 1970, the ranking of countries has probably altered with Egypt giving way to Iran and Saudi Arabia as a result of their recent huge acquisitions of weapons systems, primarily from the United States.

The lack of industrial infrastructure and skilled personnel to repair, service and maintain military equipment has made it necessary to resort to foreign specialists in training and technical supervision. The scale of US training and technical assistance activities is indicated by the fact that in 1975, if only the ten largest projects in all Third World countries are taken into account, US firms and the Department of Defense were implementing

^{1/} Maharaj K. Chopra, India's Defense Policy and Infrastructure, Military Review, May 1978, pp. 34-35.

^{2/} Albrecht, Ernst, Lock and Wulf, op.cit., 1976, pp. 67-69.

^{3/} Data originate in Kennedy, op.cit., 1974, pp. 308-325.

military projects worth \$ 296 million and involving about 2500 specialists. By 1977, the value of the projects had risen to \$ 695 million and the number of personnel to some 4300 technicians. They accounted for only a fraction of the total number of US technical advisers in Iran (said to amount to some 15-20,000 people). In Saudi Arabia the value of contracts grew during the same period from \$ 362 million to \$ 856 million, and the number of personnel from 2245 to 2331. Other countries with whom US firms and military authorities have concluded training and technical assistance programmes include South Korea, Taiwan, Kuwait, Turkey, Greece, Zaire, Egypt and Jordan.^{1/}

Dependence on the import of arms is more common in the Third World than their domestic production.^{2/} Earlier in this paper, the overall pattern of arms imports to the Third World was outlined, so that the present account only covers the significance of the arms imported relative to other imports. This aspect is highlighted by relating the value of annual arms imports to the total imports of the most prominent developing countries in the international arms market:^{3/}

Table 2 (12): The share of arms imports of the total imports, 1968-1975

	<u>1968</u>	<u>1970</u>	<u>1972</u>	<u>1974</u>	<u>1974</u>
Iraq	32.9	9.6	11.9	17.6	10.7
Republic of Korea	22.2	7.6	20.2	1.7	2.5
Egypt*	18.2	82.1	32.6	5.0	6.2
Saudi Arabia	14.0	3.8	4.6	13.8	3.5
Syria	13.2	17.1	19.2	...	...
Iran	9.8	9.6	17.2	16.0	10.7
Pakistan	6.9	5.1	14.3	5.4	3.2
India	6.5	4.7	9.2	2.5	2.4
Israel	5.0	16.3	10.6	15.3	17.2
Peru	4.8	3.9	10.0	4.9	3.6
Chile	2.4	1.2	1.7	4.4	2.7
Brazil	2.0	0.7	1.2	0.5	0.5
Argentina	1.-	1.4	4.3	1.2	0.9
Libya	0.5	10.8	17.2	5.8	10.2
Venezuela	0.2	0.2	3.0	2.3	0.7

* There is considerable controversy over the Egyptian data.^{4/}

^{1/} See Hannu Kyröläinen, *An Analysis of New Trends in the US Military Training and Technical Assistance in the Third World*; *Instant Research on Peace and Violence* (Tampere) 3-4, 1977, pp. 167-183, and the literature mentioned there.

^{2/} It may be worth noting, however, that the leading domestic arms producers are also major importers of arms, see e.g. Jan Berg, *Third World Armament*, *Instant Research on Peace and Violence* (Tampere, 4, 1975, pp. 222-237.

^{3/} Data used in the calculation of these percentages originate in *World Military Expenditures ...*, op.cit., 1977, passim. and *UN Statistical Yearbook ...*, op.cit., 1978, pp. 466-474.

^{4/} *Ibid*, p. 129.

A more significant view of the import dependence of developing countries might be obtained by relating the value of arms imported to total imports in SITC category No. 7, machinery and transport equipment. These percentages are given in the following table:

Table 2 (13): The share of arms imports in total SITC No. 7 imports by selected developing countries, 1965-1974, per cent

	<u>1965</u>	<u>1968</u>	<u>1970</u>	<u>1974</u>
Republic of Korea	173.3	60.6	n.a.	1.7
Egypt	42.4	96.3	n.a.	103.2
Saudi Arabia	n.a.	41.8	47.7	n.a.
Turkey	38.7	80.1	23.7	n.a.
India	n.a.	23.9	20.4	23.9
Israel	19.8	19.8	n.a.	62.4
Iran	11.8	23.3	n.a.	42.0

The lumpiness of equipment items probably accounts for the large annual fluctuations. In all the countries listed above the share of arms imports in the total imports of machinery and transport equipment has been at such a high level that they must constitute a heavy burden on the national economy and on its industrialisation programme. The dependence on arms imports appears to continue with the exception of South Korea, which seems to have been able to foster domestic arms industry to substitute for a growing proportion of imports. In the case of Israel and Egypt the 1974 figures reflect replacements for the large losses incurred in the 1973 October war.

CHAPTER 3: THE INTERNATIONALISATION OF THE ARMAMENTS INDUSTRY

Internationalisation of capital may take place in several ways. Direct foreign investments, which lead to the establishment of production, marketing or service subsidiaries abroad, are probably the most important channel. These investments can be used, however, in several ways; in majority-owned affiliates, in co-production and licensed production arrangements, as well as in the subcontracting of certain components of weapons systems. Existing circumstances in the home and host countries determine the outcome of the selection process between these alternatives.

The most crucial decision is probably between exporting strategy and undertaking direct investments. For instance, industries with a high R + D content may not embark upon foreign investments because the advantage of local marketing is small relative to the advantage yielded by new technology. When technology loses its novelty and competition develops, the probability of foreign investments increases to utilise, for example, cheaper production costs, and closeness to foreign markets.^{1/}

3.1 Direct Investments

The armament industry has not been very prone to invest in foreign production plants, and only recently has a certain increase been observed. One factor that may have accounted for the change is that, for security reasons, there has been a preference for keeping arms manufacture in domestic hands, or at least under majority control. Research-intensive corporations, especially in the aircraft industry, have resisted a shift to direct investments, for the reasons given above, but the following examples illustrate the breaking-down of this attitude.

Lockheed has controlled, since 1959, one fifth of Aeronautica Macchi SpA and Raytheon, 24 per cent of Selenia, both in Italy. Pratt and Whitney has a 10 per cent share in the French SNECMA, Northrop controls 24 per cent of Construcciones Aeronauticas in Spain and Cassna Aircraft 49 per cent of Max Holste/Reims Av. in France.^{2/} EMBRAER, the biggest aircraft producer in Brazil, is 49 per cent in private hands, Volkswagen do Brazil being the biggest private shareholder. Imperial Chemical Industries (ICI) together with the Anglo-American Corporation control ARMSCOR, a notable South African producer of ammunition and explosives.^{3/} The Belgian arms-maker Fabrique Nationale, which belongs to the giant Société Générale de Belgique group, is bidding for Browning, a US distributor of guns.^{4/}

^{1/} These conclusions rely to great extent on Sanjaya Lall and Paul Streeten, *Foreign Investment, Transnationals and Developing Countries*, London 1977, pp. 16-36, p. 35.

^{2/} See Ulrich Albrecht, *Multinationale Konzerne und Rüstung*, in Dieter Senghaas and Ulrich Menzel (eds.), *Multinationale Konzerne und Dritte Welt*, Frankfurt am Main, 1977, p. 138; Jonathan Galloway, *Multinational Corporations and Military-Industrial Linkages*, Steven Rosen (ed.), *Testing the Theory of the Military-Industrial Complex*, Lexington, Mass., 1973, p. 272; and Raymond Vernon, *Multinational Enterprises and National Security*, Adelphi Papers, No. 74, London, 1971.

^{3/} See Peter Lock and Herbert Wulf, *Register of Arms Production in Developing Countries*, Hamburg 1977, pp. 42 and 63.

^{4/} See, *A Belgian Arms Maker Bids for Browning*, *Business Week*, August 22, 1977, pp. 27-28.

Rockwell International, a relatively important TNC in the military sector, controls 120 subsidiaries in 30 countries, including Brazil, Hong Kong, Singapore, South Africa and Taiwan. Sales by Rockwell's foreign subsidiaries have rapidly increased during the 1970s: in 1972, foreign sales accounted for only 5 per cent of North American Rockwell's total, but two years later, in 1974, the corresponding share was already 13 per cent, amounting in absolute terms to \$ 562 million. In that year foreign profits contributed 21 per cent of Rockwell International's total profits.^{1/} Rockwell is also planning to expand its international activities: "The company is actively exploring opportunities in such countries as Iran, Egypt, Saudi Arabia, Kuwait, Nigeria and Zaire. ... Efforts are also being made to tap markets in the People's Republic of China as well as to locate sources of products and material needed by Rockwell."^{2/}

Naturally, not all these foreign operations by Rockwell involve a military component, but it is likely that many of its activities in the electronic and communications industry are of military interest.

A large number of additional examples could be mentioned, especially in the production of small arms. To take examples from the Federal Republic of Germany, Fritz Werner AG has military production plants at least in Israel, Indonesia, Guinea, Nigeria and Iran. Other West German munitions firms have established production facilities, for instance, in Thailand, Burma and Sudan.^{3/}

3.2 Military Co-production and Licensed Production

Direct investments in the armament sector are, however, still in their infancy. In contrast, various co-production and licensed production arrangements are much more common, both among developed and between developed and developing countries. These arrangements normally involve licensed production by foreign firms or joint enterprises which agree to produce separate components of a common weapons system. The F-16 project between Belgium, Denmark, Holland, Norway and the United States is probably the best-known example of this sort of co-production.

A preliminary view of the extent of US co-production and licensed projects abroad can be obtained from the following table, which gives the number of these projects by leading arms manufacturers, as well as their distribution between developed and developing countries.^{4/}

^{1/} Paul Fitzgerlad et al., Rockwell International, Pacific North-West Research Center, Eugene 1975, pp. 24-25 and 30-34; and Rockwell International, Annual Report 1974, pp. 1 and 29-30.

^{2/} Fitzgerald et al., op.cit., 1974, p. 29.

^{3/} Albrecht, op.cit., 1977, p. 130.

^{4/} This table is constructed on the basis of data from Michael T. Klare, Arms, Technology and Dependency: US Military Co-Production Abroad, NACLA Latin America and Empire Report 1, 1977, pp. 25-32. The total value of these ventures amounted to \$ 8.5 billion in 1975 dollars.

Table 3 (1): US military co-production projects abroad

	<u>Developed countries</u>	<u>Developing countries</u>	<u>Total</u>
General Electric	12	-	12
Bell	8	2	10
Northrop	3	2	5
Sikorsky	5	-	5
Cessna	-	4	4
Hughes	3	1	4
Pratt and Whitney	4	-	4
Boeing	4	-	4
Lycoming	3	1	4
Raytheon	3	-	3
General Dynamics	2	-	2
Lockheed	2	-	2
Pazmany	-	2	2
McDonnell-Douglas	2	-	2
All others	7	8	15
TOTAL	58	20	78

A number of conclusions may be drawn from the above table. Practically all the corporations on the list are aircraft manufacturers, which seem to be most internationalised both in terms of exports, direct investments and co-production patterns. There are more joint projects with governments and manufacturers from developed than from developing countries. In fact, Japan and Italy are key partners, with whom US aircraft manufacturers have concluded a total of 40 joint projects. Of individual firms the two most dominant are General Electric and Bell, while United Technologies comes third because both Sikorsky and Pratt and Whitney are its subsidiaries.

In the Third World, the United States has concluded co-production agreements with eight countries. More than one contract has been concluded with Taiwan (5), Pakistan (4), South Korea (3), Argentina (3) and Iran (2). The five most important destinations of US arms exports in 1965-74 were, in descending order: South Vietnam, Iran, Israel, South Korea and Taiwan.^{1/} Three countries, viz. Taiwan, South Korea and Iran, are on both lists, which indicates that co-production and exports are not alternatives but constitute complementary means of obtaining weapons and military technology. The overlap between major arms importers and major partners in co-production enterprises casts some doubt on the validity of the product cycle model, which would suggest a temporal order between exports and the transfer of production abroad.

One may hypothesise that co-production creates more influence over the recipient than the mere transfer of arms. The influence gained through co-production is more material, more permanent and hence more difficult to counter, at least in the short run. The United States with her military industry has concluded a total of 78 co-production agreements with 22 countries. This naturally creates a transnational production network which facilitates further integration of production on an international scale and tends to increase US political and economic leverage.

^{1/} Sources of this information are Michael T. Klare, op.cit., as well as World Military Expenditures and Arms Transfers, 1966-1975, ACDA, Washington D.C., 1977, pp. 78-80, and Michael T. Klare, La Multinationalisation des industries de guerre, Le Monde Diplomatique, février 1977.

As pointed out above this transnational network of production and influence is most intense across the Pacific and Atlantic. Cross-licensing and co-production between Western Europe and the United States have been proposed in NATO circles as a way of solving the much-discussed economic and military problem of destandardised weapons systems. Co-production schemes within Western Europe are, however, more frequent than deals made across the Atlantic.

The West European arms manufacturers are not only concluding co-production projects within their own subregion, but also extending their activities to developing countries. Although reliable comparative data do not exist, there are indications that French and West German firms in particular are as active in this field as the US arms manufacturers, while British and Italian companies have opted for a somewhat lower level of internationalisation in terms of licensed production. As an example, reference may be made again to MBB which has given licensing rights to produce missiles in Brazil, Iran, Pakistan and Turkey. West German warships are, in turn, produced in Argentina, Brazil, Colombia, Greece, Spain and Turkey.^{1/}

These examples may suffice to indicate that the process of internationalisation is taking place primarily through joint ventures. It would appear that the aircraft industry is internationalising most rapidly, although direct investments in the ammunition and small-arms sector are worth noting, as are joint projects in the production of missiles. Such trends in the aircraft industry may be due to the intensive competition prevailing worldwide, which leads to the search for partners in other countries to promote the expansion of production and marketing.

A striking observation is the expansion of almost all the leading US manufacturers of military aircraft to Europe. This is related to the traditional practice of French and British producers of military aircraft, relying on exports in order to maintain economic viability, while US firms have depended on domestic markets. The situation is now changing in the United States.^{2/} One source has estimated that over 20 per cent of US military aerospace production in 1976 was devoted to foreign military sales.^{3/} In 1964, the corresponding share had been only 4 per cent.^{4/}

For major arms manufacturers, one of the main reasons for licensed production in a developing country is the attempt to cut down production costs. The licensed production of Northrop's F-5 fighter in Spain is a case in point. Rough estimates indicate that the

^{1/} Albrecht, op.cit., 1977, p. 130.

^{2/} See Mary Kaldor, *European Defence Industries - National and International Implications*, ISIO Monographs, No. 8, Sussex 1972, pp. 31-32, and Emma Rotschild, *The Arms Boom and How to Stop It*; *The New York Review of Books*, January 20, 1977, p. 24.

^{3/} See, *Casualties of a Cut in Arms Sales Abroad*, *Business Week*, April 25, 1977, p. 34.

^{4/} For further details see Ulrich Albrecht, *Der Handel mit Waffen*, München 1971, pp. 10-12, 163-165 and 169.

production costs of a unit amounted to 590,000 dollars in the United States, rising to 770,000 dollars when it was produced in the Netherlands by Fokker. In Spain, production costs were around 500,000 dollars, so that considerable savings could be achieved. A more detailed analysis of the licensed production of F-5s in Spain shows that all the components which could be produced cost-effectively in the United States were imported, while only technologically less complicated, labour-intensive parts were produced in Spain. In other words, Northrop organised such an international division of labour that the F-5 was produced in the cost-optimal manner, from the standpoint of the corporation.^{1/}

Licensed production appears to be favoured more by firms from middle-sized countries than from big powers. Many of these projects are probably motivated by the search for lower production costs, but this is unlikely to be the sole reason for the proliferation of such contracts. The economic benefits and spin-offs of a co-production project are largely determined by its organisation. A distinction between vertical and horizontal co-production arrangements may prove analytically useful.

Vertical co-production signifies that the industry of the purchasing country not only produces components for the particular weapons system bought by the country, but also produces those components for all the systems constructed abroad. Horizontal co-production, in contrast, signifies the production of components only for those weapons acquired by the country herself. Vertical co-production is likely to be more profitable to the producer of the components than the horizontal because of the more obvious cost-reducing factors in the former. From the standpoint of the seller as well, the vertical version would be more useful since cost reduction would also benefit him. The economic factor may provide the main explanation for the observation that vertical co-production projects have been recently on the increase.^{2/}

The vertical arrangement may contain, however, some marketing aspects which may cause problems: the producer of components may eventually compete with the parent. Initially TNCs usually adopt a positive view towards licensed production and co-production as they see this as a way of enhancing their influence in the local market and reducing the market shares of their rivals. The threat of competition from a subproducer is eliminated by restrictive clauses in the production licence, banning exports to third countries or parties.^{3/}

^{1/} For more details see Ulrich Albrecht, Dieter Ernst, Peter Lock and Herbert Wulf, *Rüstung und Unterentwicklung*, Reinbek bei Hamburg 1976, pp. 54-58.

^{2/} Claus-Detlef Lehmann, *Rüstungsexport und Rüstungskoooperation aus der Sicht der Industries*, *Wehrtechnik* 2, 1978, pp. 14-15.

^{3/} For a general analysis, see, e.g. Raimo Väyrynen, *International Patenting as a Means of Technological Dominance*, *International Social Science Journal* 2, 1978, pp. 325-327. Examples of the bans on exports include the US decision to veto the Israeli plans to sell their Kfir fighters to Ecuador or the Swedish decision to sell Viggen fighters to India. The veto decision was based on the fact that both Kfir and Viggen contain a US engine.

3.3 Subcontracting

Subcontracting, or sourcing in more general terms, is often used for the same reason as co-production agreements, i.e. to exploit a cheap labour force. Subcontracting is probably most common in electronics, where components are assembled in a low-wage country and exported back to the centre.^{1/} Electronics in general is frequently geared to military markets. According to one calculation, close to one fourth of all electronics production was used in 1974 for military purposes in the United States and Western Europe. In the United States alone the proportion was 30 per cent.^{2/}

No precise data are available on the extent of foreign production of components for various weapons systems. One indication of its widespread prevalence, however, is the concern expressed by the US Department of Defense that the country has become too dependent on the foreign production of critical components, particularly in those cases in which there may be only one US supplier. The increasing use of foreign parts is also seen as a consequence of greater involvement in co-production agreements for major weapons systems.^{3/}

The growth of foreign operations of the electronics industry having military relevance may be noted by the appearance of electronics firms with offshore operations in the list of 100 leading Department of Defense (DoD) contractors. This admittedly very tentative investigation resulted in the following overall picture:^{4/}

Table 3 (2): The extent of offshore operations by US producers of military electronics in 1974

<u>Rank in DoD contracts</u>	<u>Firm</u>	<u>Number of employees in offshore factories</u>	<u>Location of operations</u>
1	General Electric	1,000	Singapore
22	RCA Corporation	3,000	Singapore, Malaysia, Taiwan
25	Teledyne	3,300	Singapore, Hong Kong, Malaysia
36	Fairchild	13,300	Hong Kong, South Korea, Singapore, Mexico, Indonesia
41	Texas Instruments	11,300	Singapore, Malaysia, El Salvador, Taiwan
63	Motorola	7,800	South Korea, Mexico, Malaysia, Hong Kong
97	Hewlett Packard	2,600	Singapore, Malaysia
-	Eight other firms with information on offshore operations	21,250	Singapore, Malaysia, Thailand, Indonesia, Hong Kong, Mauritius, S-Korea, Mexico
	TOTAL	63,550	

^{1/} For a general analysis of subcontracting in the electronics industry see International Subcontracting Arrangements in Electronics between Developed Market-Economy Countries and Developing Countries, UNCTAD, TD/B/C.2/144, Supp. 1, New York, 1975.

^{2/} ^{3/} and ^{4/} see next page.

From the table, those electronics firms which were among the 100 major military contractors in the United States had, in 1974, an average of 6043 workers in their offshore plants, while the corresponding average for corporations outside this category was 2656. This would represent indirect evidence to the effect that the main producers of military electronics have fairly extensive international operations. On the other hand, the difference between averages is at least partly due to the fact that the size of a firm explains both its importance as a military producer and its extent of offshore operations.

Offshore operations are strongly concentrated in certain countries in Asia, in particular South Korea, Taiwan, Singapore and Hong Kong, and to a lesser extent in Mexico. Electronic components are normally produced or assembled in export processing zones, which are established to attract international business to a developing country.^{1/} Thus the foreign production of military electronics is closely related to the overall international economic division of labour.

3.4 Technological Dependence and the Process of Internationalisation

3.4.1 The Case of AOI

The Arab Organisation for Industrialisation (AOI) was established in May 1975 to develop a military and civil industrial base for the Arab world, to free it from technological dependence on the industrialised countries. The organisation comprises Egypt, Saudi Arabi, Qatar and the United Arab Emirates. Plans for the establishment of the AOI date back to 1972 when the project was discussed by the Chiefs of General Staff from 18 Arab countries. This meeting in Cairo was followed in 1974 by the announcement by the Arab Defence Council that its members would allocate \$ 1.2 billion for the establishment of the joint military industry.^{2/} Only four countries participate, however, for the time being in the work of the organisation which is mainly financed by the oil-surplus countries. Particularly by Saudi Arabia, while most of the production activities take place in Egypt. This division of labour is largely based on the fact that Egypt has, among Arab countries, the longest experience in the production of arms: she has manufactured tanks since 1952, military aircraft since 1959, and missiles since 1962. Most of this production has been based on licences and foreign know-how.^{3/}

^{2/} See Edmon Scibirras, *Multinational Electronics Companies and National Economic Policies*, Greenwich, Conn., 1977, pp. 41-42 and 62-63.

^{3/} Jacques S. Gansler, *Let's Change the Way the Pentagon Does Business*, *Harvard Business Review* 3, 1977, pp. 110 and 115.

^{4/} Sources of these data are *International Subcontracting Arrangements*, op.cit., 1975, pp. 16-17, and *United States Armament Industry: The 100 Largest Defence Contractors in FY 1976*, *Government Business Worldwide Reports*, August 1977, p. 6.

^{1/} A more detailed analysis of these zones is provided by Folker Fröbel, Jürgen Heinrichs and Otto Kreye, *Die neue internationale Arbeitsteilung*, Reinbek bei Hamburg, 1977, esp. pp. 479-551. See also *Free Trade Zones and Industrialisation of Asia*, AMPO, Tokyo 1977.

^{2/} Signe Landgren-Bäckström, *The Transfer of Military Technology to Third World Countries*, *Bulletin of Peace Proposals* 2, 1977, p. 117.

^{3/} *Ibid*, p. 114.

The work of the AOI, primarily geared to the production of military hardware, is now ready to begin with the negotiation of several protocols and agreements with the British, French and US governments, and producers of military technology (in particular in the aerospace industry which accounts for 65-70 per cent of its activities). The Arab Organisation of Industrialisation includes the following among its projects:

- Aircraft: The AOI concluded in September 1978 an agreement with Dassault-Breguet on the manufacture of Alpha-Jet trainers and attack planes as well as Mirage 2000 fighters in Egypt. Alpha-Jet is marketed by the French, although it is the product of French-German co-operation. An interesting aspect of Mirage 2000 is the fact that it has not yet come off from the production line in France.^{1/} The AOI has been negotiating as well with the French engine manufacturers, Snecma and Turbomeca, for the formation of a joint venture, the Arab-French Engine Co., to produce engines for the Alpha-Jets and Mirage fighters. The engines are to be manufactured at Helwan, in the vicinity of Cairo.^{2/}

- Helicopters: AOI has signed a contract with Westland and Rolls Royce for the production of 230 of their helicopters, and 750 Rolls-Royce GEM engines to power them. According to existing plans, the assembly of Lynx helicopters should be started by the Arab-British Helicopter Co. at Helwan in 1979.

- Missiles: Several thousand British Swingfire antitank missiles are to be assembled from September 1979 onwards. The production is to be undertaken by a joint venture, the Arab British Dynamics Co., on the basis of a licence from the British Aerospace Corporation.

- Military vehicles: The Arab-American Vehicle Co., inaugurated in late 1978 a plant in the neighbourhood of Cairo to turn out American Motors jeeps and other vehicles which are locally assembled from components produced in the United States. The objective is to increase the local production of components until they meet about 80 per cent of demand.^{3/}

Formal agreements have been concluded on the production and assembling of the weapons systems mentioned above. Many other plans which have not been finalised include the procurement and production of an air defence missile system; discussions are in progress with Aerospatiale, Matra and Thomson-CSF. There are also plans, negotiated with French companies, on the manufacture and installation of surveillance radar and communications equipment for the air defence network. A project, closely related to this command and control network, is the construction of an electronics plant in Saudi Arabia to produce the ground electronics inputs. The plan also includes the production of airborne electronics for the military aircraft manufactured by the AOI.^{4/}

^{1/} Arab Arms: Buying the Best, The Economist, September 23, 1978, p. 80.

^{2/} Franco-Arab Engine Company Under Discussion, Aviation Week and Space Technology, August 14, 1978, p. 19.

^{3/} See Robert Ropelewski, Arabs Seek Arms Sufficiency, Aviation Week and Space Technology, May 15, 1978 (a), pp. 14-16, Robert Ropelewski, Arabs Push Arms Industry Despite Peace, Aviation Week and Space Technology, November 6, 1978 (a), pp. 16-18 and Robert Ropelewski Management: Improvisation Key to Egyptian Growth, Aviation Week and Space Technology, November 13, 1978 (c), pp. 38-42 and 47.

^{4/} Ropelewski, op.cit., 1978 (a), pp. 14-15 and Ropelewski, op.cit., 1978 (b), p. 16.

The examples provided above indicate clearly that the AOI is almost entirely dependent on Western military technology. At least in the beginning most of the components will be produced by armaments-oriented transnational corporations in the industrialised countries, with arrangements for assembly in the Arab countries. The degree of dependence is deepened by having to import practically all the machine tools and other industrial equipment needed in the construction and installation of factories. The manpower will be, however, mostly Arab labour accounting, in the Lynx project for instance, for about 90 per cent of the production man hours involved.

In technologically more complicated areas the AOI has to rely on foreign experts. The executive bodies of the organisation - the Council of Defence Ministers and the twelve-man Board of Directors - are, however, trying to increase local expertise with the aid of extensive training programmes: "An extensive training programme has begun in the US, England and France to update Arab managerial, technical and production personnel in Western management, finance, design, engineering and production techniques. This year alone, for example, some 2500 Arabs are expected to complete their training in the US, England, France, Italy and West Germany, including finance, airframe design, gas turbine design, propulsion, flight controls, metallurgy and structures. Both education institutions and industry are involved in this programme. The Harvard Business School is providing some of the management finance training in the US, for example, while such European firms as British Aerospace, Rolls Royce Westland, Matra and Snecma are providing technical training.^{1/}

The Arab Organisation for Industrialisation is therefore aiming, in the longer run, at the self-reliant production of weapons systems and military technology. The utilisation of Western technology and training may be seen as a means of tilting the military balance in favour of the Arab countries, and to complement their financial wealth with technological knowledge and military capability. These trends are also indicated, for example, by the establishment of the Arab Institute for Aerospace Technology in Cairo to advance local technical capacity. There is after all a history of successful technical transfer to countries that have emerged as competitors in technology markets. Japan in general, and Israel in the field of military technology, are examples of this trend which is, however, increasingly hampered by the policy of industrialised countries to restrict the transfer of technology. The fear of technological competition from developing countries has prompted arguments against freely exporting technology from the US, particularly by enterprises.^{2/} These fears appear exaggerated for many observers, since the developing countries are still very dependent on the technology and management provided by the TNCs, which can also control the use of output through their transnational marketing networks. The case of the AOI very strongly illustrates the dominant role of these companies, the technological dependence of the Arab countries and their counter-efforts to diminish their dependence.

^{1/} Kopelevski, op.cit., 1978 (a), p. 14.

^{2/} See, e.g., Joanne Omang, Protectionism in Technology, The Guardian, August 20, 1978.

3.4.2 Some General Remarks

It was noted earlier in this study that the development of the domestic capacity to produce arms was initiated through import substitution industrialisation policies, followed later by policies of export promotion. In both of these strategies of industrialisation, foreign capital and technology have played a major role in the development of the industrial base. In the export promotion model the role of foreign capital and technology has been more direct and vertically organised, related to the fact that transnational corporations are the dominant force in the organisation of the prevailing division of labour. This is equally valid in arms production where there is even more dependence on the transnational arms manufacturers and technology controlled by them.

In the import-substitution model the situation is different because state investments, either alone or more often in co-operation with foreign capital, are used in the development of an industrial base intended to replace goods previously imported. The substitution of imported finished goods by domestically produced goods may require the import of a large volume of raw materials and intermediate products. In cases where the import substituting country does not possess a domestic capital goods industry, the additional investment will generate a demand for imported capital goods. Thus, especially in the short run, the direct savings of foreign exchange from a strategy of import-substituting industrialisation may be less than the indirect expenditure of foreign exchange arising out of the need to import investment goods and inputs.^{1/} The costs of technological dependence in the import-substitution strategy are compounded by the oligopolist structure of the market, which leads to the payment of "excess prices", direct and indirect. While there is little reliable information, existing data indicate that the direct payments for technologies acquired is only a small part of the total costs involved. The cases of Bolivia and Chile strongly suggest that the bulk of costs is in fact ascribable to the purchase of imported intermediary goods.^{2/}

These general characteristics of import-substitution are equally relevant to arms production, as illustrated by the case of AOI. In fact, technological dependence in arms manufacturing is likely to be even deeper than in the civilian sectors since military production is normally more technology- and research-intensive, and external inputs can only be obtained from transnational corporations. Very few exceptions are to be found in developing countries, including semi-successful examples such as India and Brazil. Brazil has been particularly successful in the aerospace industry, in which she has started to conquer the markets of industrialised countries.^{3/}

^{1/} See, e.g., K.B. Griffin and J.L. Enos, *Planning Development*, London, 1970, pp. 144-145.

^{2/} Bernadette Madeuf and Charles-Albert Michalet, *A New Approach to International Economics*, *International Social Science Journal* 2, 1978, pp. 275-278. The dependence on the imports of military materials can be seen even in the case of such an advanced country as Sweden which imported in 1968 totally 32 per cent, including both direct and indirect imports, of her defence materials. The dependence on the imports of the aircraft and missile technology was probably even higher, especially in the case of the computers and electronics which were primarily bought from the United States. See Karl-Erik Strand et al., *Försvarsindustriella problem*, Stockholm 1975, pp. 52-58; cf. Ingemar Dörfer, *System 37 Viggen, Arms, Technology and the Domestication of Glory*, Oslo, 1973, pp. 99-111.

^{3/} See Ambraser: *Brazil's Aircraft Industry*, *Business Week*, October 16, 1978, pp. 39-40.

Domestic arms production capacity in a developing country is almost invariably established through the technical and financial aid of DME governments and transnational corporations, although in some cases, such as India, Brazil and South Africa, the local public sectors have dominated arms production. The Soviet Union, on her part, has been quite reluctant to participate in the establishment of local arms production capacity in the Third World, with China and India as the main exceptions to this rule. India in fact is a good example of a developing country which has been capable of indigenising her arms industry on a broad front, extending from aircraft and tank production to naval craft and electronics. Even India is, however, still dependent on the availability of foreign military technology.^{1/} Her recent decision to acquire Jaguar International fighters from the United Kingdom illustrates this last point.^{2/} Nevertheless, India remains an example of a developing country using a building bloc approach to create autonomous arms production. The essence of this approach, involving step-by-step efforts, has been described in the following manner: "Typically, a country begins by performing overhaul and maintenance work on its imported weapons under the supervision of foreign specialists. After acquiring considerable experience in this kind of work, a country will attempt to assemble a foreign-designed weapon under licence, using imported parts and materials. Next the country will begin to fabricate some of the components in local plants, usually with tools and equipment obtained from the licensor. Gradually more and more of the components will be produced locally until the weapon (still of foreign design) is entirely composed of indigenous components."^{3/}

It is, however, apparent that this incremental strategy has so far worked in few cases, and it has presupposed the existence of a substantial domestic industrial basis. The situation has been analysed, for instance, as follows: "The dependence normally associated with arms transfers does not disappear with the establishment of domestic defence industries; less-developed states are likely to remain dependent on suppliers of special alloys and electronic components, and they cannot maintain an R + D base comparable to those of major arms-producing countries. The decision to emphasise indigenous production can also accentuate arms-transfer dependence."^{4/}

^{1/} See Maharaj K. Chopra, India's Defence Policy and Infrastructure, Military Review, May 1978, pp. 31-41, and Herbert Wulf, Indian: Militarisation und der Aufbau einer autonomen Rüstungsproduktion, Internationales Asienforum 3, 1975, pp. 271-301.

^{2/} See, India Selects Jaguar International, Aviation Week and Space Technology, October 16, 1978, p. 26 and India to Get Jaguar Trainers, Aviation Week and Space Technology, October 23, 1978, p. 26.

^{3/} Klare, op.cit., 1977, p. 26. See also Strategic Survey 1977, London, 1977, pp. 22-23.

^{4/} Strategic Survey, op.cit., 1977, p. 23.

These features mean in practice that even though labour costs in the periphery are lower than in the centre, total production costs tend to be higher in the former.^{1/} This is partly due to the high costs of imported inputs, to the monopoly rents the periphery has to pay, but also to the relatively short production runs. Total production costs in the periphery can be cut down only when production is organised within a TNC, which means that normally only the company benefits from the arrangement.

An illustrative example of almost complete dependence on foreign military technology is provided by a transnational project to build the \$ 15 billion Al Assard "missile city" in Saudi Arabia - an enclave rather than import-substituting or export-promoting economy. Al Assard is to be a military-industrial complex ready to construct everything from rifles to advanced missiles, based to a large extent on French technology. A US construction company, Sam P. Wallace Co., has brought together a heterogenous group of Brazilian, French, American and Saudi business interests to start the building of the city. About 20,000 Brazilian workers are already trained for the project.^{2/} It seems likely, therefore, that the only real contribution of Saudi Arabia to this project will be financial, so that the Al Assard complex can hardly be conceived, in its present form, as the beginning of an autonomous capacity to manufacture advanced weapons systems in the country.

^{1/} Albrecht, op.cit., 1977, pp. 132-133.

^{2/} Sam Wallace's Bid to Build a Saudi "Missile City", Business Week, September 4, 1978, pp. 78-79.

CHAPTER 4: THE EXPORT OF ARMS AND MILITARY TECHNOLOGY

4.1 Introduction: The Institutional Dimension

Internationalisation of the armaments industry is not, of course, only a post-war phenomenon. Arms manufacturers with extensive international operations operated both in the inter-war years and before World War I. The main difference is that earlier international operations normally consisted of exports and marketing of weapons produced at home, while armaments production today is increasingly characterised by the world-wide integration of production.^{1/} Nevertheless, it needs to be pointed out that the role of exports is quantitatively speaking still more important than the transnational production of arms. The armaments industry is also less internationalised than some mainly civilian-oriented industries. Another development is the fact that arms transfers now better reflect the underlying structure of the international system than what was the case in the inter-war period. In other words, they are more directly connected with international trade flows, direct foreign investments and the extraction of mineral resources from the periphery to the centre nations.^{2/}

It would be erroneous, however, to examine arms transfers simply as an aspect of international relations. They are, on the contrary, deeply rooted in the domestic economic and political systems of both suppliers and recipients. Naturally, the domestic functions of arms transfers differ in these two groups of countries, to reflect the asymmetric character of the international system. In addition, as was pointed out earlier, the economic and political roots of the arms suppliers are obviously different in capitalist and socialist countries. Finally, it is impossible to divide countries into two pure categories of suppliers and recipients. An increasing number of countries simultaneously exports and imports arms and military technology. These countries are not only located in the industrialised part of the world, but are to be found increasingly in the Third World.

The complexity of the structure of the international arms trade is, however, increased by the presence of various non-governmental, often transnational, actors whose impact on the process of arms transfers is apparently increasing as a consequence of changes in the arms economies of the supplier countries. These actors include transnational corporations, liberation movements and various other private or semi-private organisations.^{3/} In most cases these actors are unable to act without the permission, guidance or protection of governments. Hence it is impossible to neglect their relationships with governments and national bureaucracies in the process of arms transfers.

^{1/} A general analysis of the worldwide sourcing has been carried out by György Adam, *Multinational Corporations and Worldwide Sourcing*, in Hugo Radice (ed.), *International Firms and Modern Imperialism*, Harmondsworth, 1975, pp. 89-104.

^{2/} See Jan Øberg, *Arms Trade with the Third World as an Aspect of Imperialism*, *Journal of Peace Research* 3, 1975, pp. 213-234.

^{3/} For one typology of these non-state actors see Peter Lock and Herbert Wulf, *New Trends and Actors in Arms Transfers Process to Peripheral Countries*, *Instant Research on Peace and Violence* 4, 1975, pp. 193-194.

The quantitative and distributional aspects of the international transfer of arms have been analysed above. The following section attempts to highlight selected qualitative changes. It is often pointed out that a shift has taken place from second-hand and obsolete equipment to the most modern and effective weapons systems (fighters, tanks, missiles, etc.). There is much evidence to support this view, although the change may be of fairly recent origin. A comparison of the "newness" of arms transfers in the inter-war and the post-war (until 1968) periods shows that various weapons systems transferred were much newer during the inter-war period than during the post-war era.^{1/} The shift to more advanced weapons systems, in terms of speed, flexibility, accuracy and destructiveness, has in fact taken place only during the last ten years. Previously, mostly surplus weapons, inherited from World War II, were marketed to the Third World.

A significant change may be discerned as well in the relative balance between the transfer of weapons and ammunition on the one hand, and supporting military technology on the other. Since 1950, only 40.5 per cent of all public military exports from the United States has consisted of weapons and ammunition. The remaining 59.5 per cent has been made up of spare parts (16.2 per cent), supporting equipment (12.3 per cent), and supporting services (31.0 per cent).^{2/} An essentially similar picture is provided by a recent study on the United States showing 41 per cent of total military exports as weapons and ammunition during the period FY 1960 - FY 1975, 18 per cent as supporting equipment, 17 per cent as spare parts and 24 per cent as training, services and construction.^{3/}

A widely observed trend in international arms transfers has been a drastic slowdown of private arms trade and a consequent increase in transfers handled by public authorities; the share of private arms traders in global international arms transactions is only some 4-5 per cent. The weapons may be sold from nationalised factories, or the government may conduct a sale and then contract production of the item from a domestic firm. As a minimum, the manufacturer has to obtain an export licence before delivering the item to a foreign buyer. The last category of transactions may be called commercial sales, a category that is quantitatively less significant in all countries than the sales negotiated by government agencies. In the United States the share of commercial sales of total arms exports varied between 20-30 per cent in the period 1950-1976. There has been a slight increase in the share of these sales, although there was a temporary fall in 1974-1975.^{4/}

^{1/} See Robert Harkavy, *The Arms Trade and International System*, Cambridge, Mass., 1975, pp. 92-97. The recent shift to high-technology weapons is illustrated by the fact that the transfer of "excess defence articles" has sharply decreased since 1972, while the total military sales of the United States has simultaneously experienced a drastic upward trend, see H.Y. Schandler, *Summary of US Arms Transfer and Security Assistance Programs*, Congressional Research Service, Washington, D.C., 1975, p. 2.

^{2/} Michael Rogers, *The Impact of Foreign Military Sales on the National Industrial Base*, Strategic Review 2, 1977, p. 15.

^{3/} *World Military Expenditures and Arms Transfers, 1966-1975*, ACDA, Washington, D.C., 1977, pp. 3 and 8-9. For related data concerning individual years, see *World Armaments and Disarmament*, SIPRI Yearbook 1977, Uppsala 1977, p. 215 and *Strategic Survey 1977*, London, 1977, pp. 24-25.

^{4/} For more details, see Michael T. Klare, *Carter's Arms Policy Business as Usual*, *NACLA Latin America and Empire Report* 6, 1977, pp. 17 and 22-23.

It may be that during these years of burgeoning arms trade the very magnitude of incoming orders has tended to emphasise the role of governmental sales, leading the outflow of US weapons, primarily to the Middle East and the Persian Gulf.

A process of commercialisation is taking place in arms transfers. The same tendency may be observed as well in the definitive replacement of military aid by arms exports. This change has been notable in the United States, which first terminated her military aid to Western Europe, then to Latin America and finally to Asia.^{1/} Consequently, the share of developing countries as purchasers of US arms and military technology has increased considerably. During the period 1950-1969, the United States accounted for, under the Foreign Military Sales Program, about 41 per cent of the total value of arms exports to developing countries, while in 1973-1976 the corresponding share varied between 70 and 92 per cent.^{2/} In fact, the markets of developing countries have become critical to export-oriented manufacturers of arms and military technology.

4.2 The Economic Motives Behind Arms Exports

The exports of arms and military technology from the United States have been sometimes attributed to the fact that industries with a high R + D content will not embark on foreign investments since the advantage of local marketing compared with home-based marketing, i.e. exports, is small relative to the advantages yielded by new technology. When the technology loses its novelty and competition develops, the probability of foreign investments rises, in order to gain from, inter alia, lower production costs and the nearness of foreign markets.

These considerations bear affinities with the product cycle model, usually applied to the US economy. According to this model, US-controlled enterprises "generate new products and processes in response to the high per capita income and the relative availability of productive factors in the United States; they introduce these products or processes abroad through exports; when their exports position is threatened they establish overseas subsidiaries to exploit what remains of their advantage; they retain their oligopolistic advantage for a period of time, then lose it as the basis for the original lead is completely eroded. ... Studies of individual products in the US market confirm the assumption that products commonly go through a cycle of initiation, exponential growth, slowdown and decline - a sequence that corresponds to the process of introduction, spread, maturation and senescence." The model in fact says that innovation has provided a basis for the export of manufactured goods from the United States. Furthermore, one of its implications is that the United States has tended to specialise in the export of products from industries that are relatively R + D-intensive both in terms of the labour force and the allocation of financial resources.^{3/}

^{1/} These changes in the post-war period have been described, for example, by John Stanley and Maurice Pearton, *The International Trade in Arms*, London 1972, pp. 88-89; and Geoffrey Kemp, *Arms Traffic and Third World Conflicts*, *International Conciliation*, No. 577, 1970, pp. 13-14.

^{2/} See Klare, *op.cit.*, 1977.

^{3/} See, e.g. Raymond Vernon, *Sovereignty at Bay, The Multinational Spread of US Enterprises*, Harmondsworth, 1971, pp. 71-82.

It would be tempting to apply this hypothesis to the US arms industry which has retained a technological edge because of its research intensiveness. This state of affairs has in turn contributed to its non-dominance, worldwide. The internationalisation of US arms manufacturing could be seen in this model as a consequence of the relative decline in her technological hegemony vis-à-vis other suppliers of arms and military technology, in particular in Western Europe. Such a conclusion would be only partially valid, encouraging the claim that it is predominantly those countries and firms which are losing their technological power that tend to invest abroad in order to compensate for this deficiency. In this form it is obviously misleading, since corporations investing abroad have to possess a certain power base in order to offset the intrinsic disadvantage of foreign operations. There is ample evidence to show that a combination of large size, advanced technological capacity and developed marketing skills tend to reinforce each other and to increase the propensity of these types of firms to internationalise their activities.^{1/}

A frequent justification for arms sales has been the need to balance the external payments of the country, and to ensure full employment in the national economy. It has been argued above that the employment rationale is at best misleading, as the arms industry provides less jobs per unit of invested capital than the average civilian industry. This paper has also demonstrated that the share of arms exports of total exports in most supplier countries is negligible, although for the major suppliers, arms exports may have a certain marginal utility.

Balance-of-payments considerations began to have an influence on US arms transfer policies in 1960, when foreign holdings of the dollar had surpassed holdings in gold for the first time in American history, with the mounting deficit largely attributed to growing US investments in Europe and to foreign aid. Efforts to solve this problem were twofold; first, European allies, in particular West Germany, were asked to increase their contribution to Western defence and second, it was decided to increase arms sales at the expense of grant assistance. The year 1961 witnessed the beginning of offset agreements between the Federal Republic and the United States.^{2/} Balance-of-payments problems have remained to fuel the US propensity to increase her arms sales, becoming prominent in 1971 when the Nixon Administration decided to relax restrictions on arms sales to improve the US balance of payments (which in that year showed an overall deficit for the first time since 1893). This policy did not lead, however, to any immediate change in the total value of military sales in 1972.^{3/}

^{1/} This conclusion relies to large extent on Sanjaya Lall and Paul Streeten, *Foreign Investment, Transnationals and Developing Countries*, London, 1977, pp. 16-26.

^{2/} See David Louscher, *The Rise of Military Sales as a US Foreign Assistance Instrument*, *Orbis* 4, 1977.

^{3/} See *ibid.*, p. 958 and Robert J. Shue and Walter K. Kealy, *Military Transactions in the US Balance of Payments*, *Survey of Current Business*, September 1975, pp. 55-60. On the other hand, one has to recall that without military commitments abroad the United States would not have any problems with her balance of payments. It has been shown that in 1955-1970, US military commitments abroad accounted for close to 90 per cent of her deficit in the balance of payments during that period. In 1955-1974, net expenses of foreign military investments were \$ 54.3 billion, while the surplus in the balance of trade amounted to \$ 48.7 billion during the same period; see Lloyd J. Dumas, *Economic Conversion, Productive Efficiency, and Social Welfare*, *Peace Research Review* 3, 1977, pp. 21-23.

The role of preoccupations with the balance of payments should not be exaggerated. The impact of various micro-economic factors related to wider political and economic processes has been equally significant. One was the surplus capacity inherited from the Vietnam war; in order to utilise this capacity, the discovery of new outlets for military products was needed, partly to serve the domestic market, but also in the shape of foreign orders. An equally important development in the arms economy was the cost explosion, intimately related to the increase in the technical complexity of weapons, where technical performance is perhaps the main criterion in determining the procurement of new weapons systems.

In these circumstances a rapid rate of innovation is a characteristic of the arms race, connected in turn with extensive investments in military R + D. These investments further increase the technical complexity of weapons, and, consequently, their costs. While production costs have risen steeply (a 15 per cent increase in the speed of the aircraft, for example, might involve a tenfold increase in costs), maintenance and support costs may grow even more rapidly.^{1/}

The constant rate of innovation leads to brief life-cycles for the weapons systems involved, signifying diminishing production runs, and therefore, increased production costs. In the aircraft industry in particular, there is growing evidence of shorter production runs for a variety of more sophisticated weapons systems employing fewer people.^{2/} A further characteristic of the present arms race is cost overruns as a contribution to more general inflationary trends in armaments production.

The consequence of all these trends has been to provoke a crisis in the armaments industry. This crisis first faced the West European military industry, but the same pressure is now felt by the United States producers. One solution to this crisis is the intensification of arms exports in order to reach tolerable unit costs in the industry. This strategy is not only promoted by the arms manufacturers, but also receives the strong endorsement of their governments, using export campaigns as well as more underhand means widely reported in the press.^{3/}

Arms sales have proved beneficial in many ways to the arms economy of the exporter. According to an estimate of the US Congressional Budget Office, an \$ 8 billion sales programme will, on an average, generate \$ 560 million in cost savings annually. Of these savings, approximately \$ 160 million represents savings which are attributable to R + D recoupements.^{b/} From the standpoint of the corporations it is not insignificant that the

1/ See Mary Kaldor, Defence Cuts and the Defence Industry, Dave Elliot et al., Alternative Works for Military Industries, London 1977, pp. 13-14.

2/ Karl-Erik Strand et al., Försvarsindustriella problem, Stockholm 1975.

3/ These tactics are vividly described by Anthony Sampson, The Arms Bazaar. The Companies, The Dealers, the Bribes: From Vickers to Lockheed, London 1977, pp. 114-143, 180-206 and 222-287. See also Kenneth C. Crowe, America for Sale, New York, 1978, pp. 52-75.

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sales of military hardware to foreign governments have been two and a half times more profitable than the sales of the same equipment to the Department of Defense.^{1/}

In addition to the export strategy there are various types of institutional arrangements that help to reduce the unit costs of weapons systems. These arrangements include production sharing, briefly analysed in the preceding chapter; and compensation deals, where the supplier of the weapons system makes a commitment to purchase a certain quantity of other goods from the recipient country. In a more general context, one may refer to various cost-sharing arrangements through which weapons systems manufactured at home are exported, through institutionalised channels, to certain predetermined markets. The fighter sales by US producers to Iran, Kuwait and Saudi Arabia are examples of this approach. The aim is simply to transfer at least a part of the R + D and other sunk costs onto affluent Third World governments and peoples.^{2/} Also relevant here is the role of arms exports to oil-producing countries in the recycling of petrodollars, enabling the industrialised countries to regain some of their financial strength in the international economic system.

4.3 The Role of Governments in Arms Exports

It was pointed out earlier in this chapter that practically all arms transactions are concluded between sovereign governments in order to promote their military and economic, internal and external aims. The virtual monopoly of governments in the international arms trade does not, however, eliminate the impact of arms manufacturers. In practically every country there are close institutional links and political relations between the government and the manufacturers. The governments, in fact, frequently market weapons on behalf of the corporations, through their official diplomatic and trade channels. The economic benefits are, however, unevenly distributed, since the manufacturers receive a considerable and growing share of the income.^{3/}

Barter transactions, usually between petroleum products and military hardware, represent one way in which governments participate in arms transfers, sometimes leading to trilateral deals involving the governments of two countries and the corporations (either in the oil or arms industry or both, in the supplier country). One instance is the deal concluded between Iran, the United Kingdom, the British Aircraft Corporation, and Shell, as well as between Iran and the United States. The latter case included a \$ 13 billion agreement to pay for the purchase of fighters, radar planes and naval destroyers by selling oil to three independent US oil companies, viz. Ashland, the New England Petroleum Company and Crown Oil.^{4/} France, too, has been involved in these arms-for-oil exchanges, especially with Saudi Arabia.^{5/}

^{1/} See Jacques Gansler, *Let's Change the Way Pentagon Does Business*, Harvard Business Review 3, 1977, p. 113.

^{2/} Michael T. Klare, *The Political Economy of Arms Sales: The United States - Saudi Arabia*, Society, September-October 1974, pp. 41-49. As a further example one could refer to the emergency aid which the Iranian Melli Bank provided to the ailing Grumman aircraft corporation in 1975; see Louis Kraar, *Grumman Still Flies for Navy, But It Is Selling the World*, Fortune 2, 1976, pp. 78-83 and 142-143.

^{3/} ^{4/} and ^{5/} see next page.

The governments have usually had political and military motives for promoting the sale of arms, although the needs of the defence industry may be taken into account. Public support assumes several forms in practice. The government may provide export credits to weapons suppliers to improve their capacity to compete with other suppliers. Various lines of credit exist for all the major suppliers of weapons, destined especially for developing countries which would otherwise have difficulties in financing their weapon purchases. Such credits are frequently available on concessional terms.^{1/}

Besides the promotion of arms sales through various organisational arrangements,^{2/} governments have also implemented collective measures to increase the viability of their arms economies. One of these measures has been to follow the strategy of promoting mergers aimed at obtaining economies of scale that would improve the competitive capacity of arms manufacture. The United Kingdom in particular has followed this approach, both in her aerospace and shipbuilding industries where the number of companies has been drastically curtailed.^{3/} In the US aircraft industry, the fate of Douglas and North American are valid examples of a merger strategy that is practiced more often in Western Europe.

The capacity of the military industry is also reinforced by nationalisations in terms of facilitating the payment of subsidies and the provision of other forms of support from the state. This strategy, once again, has been followed mostly in the United Kingdom where it has been combined with the merger movement, resulting in a situation in which two thirds of British arms production and trade are in the hands of the government. In contrast, France and the United States have been much more reluctant to pursue this alternative, opting instead for the building of close collaborative relations between the political decision makers and the top echelons of the leading arms producers.^{4/} Sweden has, by the way, followed largely the same approach.

4.4 The Role of Manufacturers in Arms Exports

Although the role of the governments in the international transfer of arms and military technology is of central importance, arms manufacturers have a vital supporting function. While almost all governments have established mechanisms to monitor arms sales, they have applied flexible procedures in controlling arms transfers. A complicating factor has been the development of a transnational arms business network in which the transfers are often outside the control of governments which, at the same time, also deliberately use this network to promote their own political interests.^{5/}

^{3/} This is shown in the British case by Lawrence Freeman, *Britain and the Arms Trade*, International Affairs, London, 1, 1978, p. 378.

^{4/} See, e.g. *The Sky is Still the Shah's Limit*, *The Economist*, August 14, 1976, pp. 52-53; *Oil for Munitions*, *Business Week*, August 23, 1976, p. 32 and *Iran: The Shah Uses Oil in Intricate Barter*, *Business Week*, February 20, 1978, pp. 41-42.

^{5/} *France Gets Cheap Saudi Oil*, *Newsweek*, February 7, 1977, p. 34.

^{1/} See, e.g. Stanley and Pearton, *op.cit.*, 1972, pp. 110-117.

^{2/} *Ibid*, pp. 85-104.

^{3/} ^{4/} and ^{5/} see next page.

Scattered data on major arms manufacturers in leading exporting countries provide an impressionistic view of their importance as the following table on US foreign military sales (FMS) for the fiscal year 1974-1975^{1/} shows:

Table 4 (1): Leading US arms exporters in 1974-75, millions of dollars

<u>Manufacturer</u>	<u>Principal exports</u>	<u>Amount</u>	<u>Per cent of total FMS awards per cent</u>
McDonnell-Douglas	F-4 aircraft	538.7	9.2
Northrop	F-5 aircraft	514.1	8.7
General Electric	Aircraft engines	377.4	6.4
Food Machinery Corp. (FMC)	M-113 armoured personnel carrier	340.8	5.8
Grumman	F-14 aircraft	340.4	5.8
United Technologies	Aircraft engines	317.8	5.4
Textron	Bell UH-1 helicopter	308.9	5.3
Hughes Aircraft	TOW, Phoenix missiles	278.8	4.7
American Motors	Military trucks	262.1	4.5
Lockheed	P-3, F-104, C-120 aircraft	231.7	3.9
Chrysler	M-60 tank	220.4	3.8
Raytheon	Hawk, Sparrow missiles	205.7	3.5
LTV Corp.	A-7 aircraft; Lance missile	180.7	3.1
Boeing	CH-47 helicopter; 707 aircraft	159.6	2.7
General Motors	Truck and aircraft engines	131.9	2.2
	TOTAL	4,409.0	75.0

The table shows that exports of major arms emphasise, in value terms, the sale of military aircraft and missiles. Only FMC, American Motors, Chrysler and General Motors, which export mainly military vehicles, may be considered exceptions to this rule. Concentration is also greater than that among Pentagon contractors in general. The total share of the five and ten major exporters is 24.3 per cent, 35.9 per cent and 69.6 per cent of all foreign military sales, while the corresponding share of three, five and ten top Pentagon contractors in all contracts was in the same fiscal year only 12.3 per cent, 19.0 per cent and 32.1 per cent, respectively.^{2/}

^{3/} Sampson, op.cit., 1977, p. 105 and Kaldor, op.cit., 1977, pp. 13-27.

^{4/} On the French case, see Sampson, op.cit., 1977, pp. 108-113. The situation may be changing, however, because the French Government has decided to take over a one-third minority holding in Dassault-Breguet; see Jacques Isnard, Dassault's New Partner: The Government, The Guardian, June 19, 1977.

^{5/} For a more detailed analysis of various restraints which can be applied on arms transfers see Raimo Väyrynen, Curbing International Transfers of Arms and Military Technology, Alternatives 1, 1978, pp. 87-113.

^{1/} The data are obtained from Michael T. Klare, America's Top Arms Merchants. Bulletin of the Atomic Scientists 6, 1977, pp. 20-21. Similar data concerning the period 1962-1966 have been published in Aiming at Arms Market Overseas, Business Week, December 3, 1966, pp. 66-67 and 70-72.

^{2/} See United States Armament Industry: The 100 Largest Defense Contractors in FY 1976, Government Business Worldwide Reports, August 1977, p. 2.

The degree of overlap between major exporters and major Pentagon contractors is also high - 13 of the total of 15 major exporters featuring on the list of 20 main Pentagon contractors; those missing are American Motors and General Motors. One change which has occurred since the mid-1960s is that electronics firms have also started to export more,^{1/} although their exports may comprise, in addition, products other than military electronics. In fact, as will be shown below, a relatively great proportion of military electronics is produced or assembled outside the United States through subcontracting arrangements.

The size of a firm appears to be the major determinant of its involvement in foreign operations as well as in defence contracting. Thus big corporations are strongly committed to both foreign and governmental markets, this in turn being a factor in their worldwide economic and political ascendancy. An empirical study of the situation in the United States shows that of the top one hundred Pentagon contractors in 1971 thirty-nine were among the 187 leading transnational corporations, and of the twenty-five top contractors, thirteen belonged to that category. The electronics industry, in particular, which is in vanguard of the technological arms race, is significantly dependent on both foreign and military sales, and the aerospace industry is moving in the same direction as a consequence of the growing internationalisation of this branch.^{2/}

Further information on the role of foreign military sales in the total military production of leading US exporters may be obtained from the following table, providing data on the share of FMS in the total DoD contracts in 1973-1976 (firms ranked in terms of their total value of FMS in 1976):^{3/}

Table 4 (2): The share of foreign military sales of the total DoD contracts in 1973-76, per cent

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>
Northrop	38.4	45.0	47.2	87.3
McDonnell Douglas	19.6	9.1	30.0	19.5
Grumman	n.a.	6.2	22.2	31.0
Litton	2.8	1.6	2.6	26.4
General Electric	11.7	13.9	16.5	18.4
Raytheon	28.6	4.6	25.2	28.0
FMC	27.2	77.4	44.7	48.1
Hughes Aircraft	4.0	14.8	15.3	19.1
Lockheed	3.0	4.0	8.2	9.2
Textron	68.1	14.4	45.4	31.0
Average share	22.6	19.1	25.7	31.8
The share of FMS of total sales, per cent	5.4	3.2	6.6	9.3

^{1/} The same tendency can be also seen in France; Kenneth J. Stein, *Avionics: French Firms Emphasise Export Efforts*, *Aviation Week and Space Technology*, November 27, 1978, pp. 49-52, 57 and 59.

^{2/} Jonathan P. Galloway, *Multinational Corporations and Military Industrial Linkages*, in Steven Rosen (ed.), *Testing the Theory of the Military-Industrial Complex*, Lexington, Mass., 1973, pp. 267-290. For critical views on Galloway's analysis, see Ulrich Albrecht, *Multinationale Konzerne und Rüstung*, in Dieter Senghaas and Ulrich Menzel, *Multinationale Konzerne und Dritte Welt*, Frankfurt am Main, 1977, pp. 128-129.

^{3/} This table is based on data presented in Steven Lydenberg, *Weapons for the World, Update, The US Corporate Role in International Arms Transfers*, Council of Economic Priorities, New York 1977.

The table shows that the market orientation of major exporters of arms and military technology varies considerably between domestic and foreign markets. One way concludes that Northrop, FMC and Textron are clearly geared to foreign markets, while, in particular, Litton and Lockheed strongly favour domestic markets.^{1/} The table also confirms the hypothesis concerning the internationalisation of the arms economy in the US case. The share of foreign military sales has increased (excepting in 1974) both in comparison with total Pentagon contracts and in relation to the total sales by the company.

The relatively high level of arms exports by the United States and other suppliers is likely to continue in the future in spite of unilateral and bilateral measures (the policies of the Carter Administration and of the US-Soviet consultations, respectively) to curb the flow of arms and military technology to the Third World.^{2/} In the US case, the continuation of arms transfers is assured by the existence of a backlog of orders which is due to a lag of three to five years in the delivery of weapons. From 1966 to 1971 this backlog averaged only to \$ 5.5 billion, in 1975 the total reached \$ 24 billion and a couple of years later the backlog amounted to a record \$ 32 billion. The backlog of Grumman Corp. has reached \$ 1.9 billion in spite of the financial difficulties which the company faced during the first half of the 1970s.^{3/}

The role of US transnational corporations in the international transfers of arms has been singled out because of their overwhelmingly dominant share. There is, however, a number of arms manufacturers in Western Europe which, in terms of their total sales, are even more oriented towards foreign markets. This applies especially to the aircraft companies of France and the United Kingdom, and, to a lesser extent, to those of the Federal Republic of Germany. Among exporters of military vehicles one may mention British Leyland and the West German Klöckner-Humboldt-Deutz as well as the French Panhard. The French case is interesting in that the state and private monopolies have established joint marketing organisations, such as Société Française d'Exportation de Matériel d'Armement and Société Française d'Exportation de Matériels Navals Militaires.^{4/}

^{1/} This generalisation is, of course, relative because Lockheed, for instance, is also pretty active internationally; see Can Roy Andersson Make People Forget Lockheed's Problems, *Business Week*, October 10, 1977, pp. 74-77 and 80-81 as well as Lockheed Looks to International Markets But Not Co-production, *Aviation Week and Space Technology*, October 31, 1977, 23-24.

^{2/} See Väyrynen, *op.cit.*, 1978, pp. 98-104.

^{3/} Rogers, *op.cit.*, 1977, p. 19 and Kraar, *op.cit.*, 1976, pp. 79-80.

^{4/} See, e.g., Wilfried Klank, Imperialistische Monopole forcieren Rüstungsexporte in die Entwicklungsländer, *IPW Berichte* 3, 1977, pp. 51-57.

CHAPTER 5: MILITARY R + D AND INDUSTRIALISATION5.1 Introduction

Military research and development may be analysed from several angles; it may be connected with the structure of the research community, progress in the strategic and tactical arms races, or the industrialisation policies of various countries. It has been often argued that at present the role of military R + D is very central to the promotion of the arms race in terms of qualitative improvements in weaponry. The present arms race, which originates in the two great powers of which the United States has been almost invariably the pacesetter, is research-intensive; in fact, no other industry can compete in this respect with the military sector.^{1/} Research-intensive weapons and military technology produced in the centre nations is further spread to developing countries through aid and trade mechanisms.

The focus of military R + D has switched from one field to another during the post-World War II period. Initially, most attention was paid, partly as a carry-over from the war period, to nuclear fission and fusion weapons, and subsequently to the development of medium and long-range missiles. Advances in the development of missile technology led to the military move into Space, which overshadowed interests in the civilian use of Space. During the 1960s, increasing attention was also paid to the military utilisation of the oceans, largely based on the combination of missile development and nuclear ship propulsion, i.e. on ballistic missile submarines. Gradually the focus started to shift from the strategic to the tactical; tactical nuclear weapons, chemical and biological warfare agents and counter-insurgency weaponry were developed. From there, it was only a short step to the increasing application of computers to manage warfare; the automated battlefield is a case in point. Advances in electronics and computer technology have, however, started to revolutionise nuclear warfare as well; strategic missiles are becoming increasingly accurate which tends to threaten the existing military balance. The cruise missile is an example of the impact of military R + D on the present tactical and strategic arms race.^{2/}

The prevalent status of military technology is dependent, according to some experts, on the dominant industries. The battleship and heavy artillery may be seen as products of the period of British hegemony, while the fighter bomber and the tank are military symbols of American economic supremacy.^{3/} All are based on the metal industry, machinery

^{1/} See, e.g. Raimo Väyrynen, *Military R + D as an Aspect of the Arms Race*, *Current Research on Peace and Violence* 3-4, 1978, pp. 177-190 and Marek Thee, *The Arms Race, Armament Dynamics, Military Research and Development, and Disarmament*, *Bulletin of Peace Proposals* 2, 1978, pp. 105-130.

^{2/} Own Wilkes, *Military Research and Development Programs: Problems of Control*, *Bulletin of Peace Proposals* 1, 1978, pp. 3-6. See also Herbert York and Allen Greb, *Military Research and Development, A Postwar History*, *Bulletin of the Atomic Scientists* 1, 1977, pp. 13-26.

^{3/} Mary Kaldor, *The Role of Arms in Capitalist Economies: The Process of Overdevelopment and Underdevelopment*, in David Carlton and Carlo Schaerf, *Arms Control and Technological Innovation*, London 1978, p. 325.

and equipment. The tank and the bomber differ, however, in the sense that their use of electronics and computers is more significant than for the products of the British era. The decline in the military sphere of dominant industries has had wider economic implications, as their ability to meet military needs has decreased, leading to subsequent support by the state in order to keep them alive. Military production may also artificially maintain decaying industries and thus hamper the balanced development of the economy because of the diversion of resources away from dynamic industries, as has been the case in Great Britain.^{1/} The role of military R + D has not been analysed very far in this context. The R + D factor is evidently crucial to the emergence and growth of dominant industries, especially in the present era. The decline of the core industries may be partly explained by the shifts in the relative emphasis on the R + D content of various industries. R + D funds, including military research and development, search for the most dynamic industries to which they are, in turn, encouraged to flow by the state and industrial circles. The brief description above of changes in the substance of military R + D tends to reinforce the impression that they are correlated with the decline and emergence of dominant and pioneering industries.

The increase in the role of the R + D factor in the military sector has encouraged the development of more expensive and sophisticated weapon systems. A manifestation of this development is the cost crisis referred to earlier, i.e. the increase in unit costs, which has been particularly evident in the aircraft industry, but also in other sectors of arms manufacturing. Reactions to the growing cost pressures have been, from the military R + D point of view, at least twofold: first, the support of co-operative weapons development has grown sharply; and second, the alleged non-military benefits of the domestic development and production of weapons have been increasingly emphasised.^{2/} Another response to the escalation of unit costs has been the partial reorientation of military technology to more small-scale and flexible weapons which may be developed and manufactured with reduced costs and which fulfil several military functions. Examples of this trend include the development of new generations of vessels, missiles and aircraft, most of which have not yet reached the stage of production and operational deployment.^{3/}

5.2 The Extent of Military R + D

Once again, the availability of data on military R + D by major military powers is incomplete and scattered. The following table contains information on the share of military R + D of total government-financed R + D in 1955-1970.^{4/}

^{1/} Mary Kaldor, op.cit., 1978, pp. 325-327 and Mary Kaldor, *The Armaments Sector*, IDS Bulletin, Sussex 2, 1977, pp. 35-39.

^{2/} See, e.g. Anne Hessian Cahn and Joseph J. Kruzal, *Arms Trade in the 1980s*, in Alexander R. Vershbow (ed.), *Controlling Future Arms Trade*, New York, 1977, pp. 51-62. According to their prediction, the significance of high-performance, high-cost systems is declining.

^{3/} *World Armaments and Disarmament*, SIPRI Yearbook 1973, Uppsala 1973, p. 275.

^{4/} See Randall Forsberg, *Resources Devoted to Military Research and Development*, SIPRI, Uppsala, 1972, pp. 82-83.

Table 5 (1): Military R + D expenditure as a percentage of total government-financed R + D, 1955-1970

	<u>1955</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>
United States	86.5	77.2	46.1	53.9
United Kingdom	79.7	69.9*	60.3	40.7**
Sweden	n.a.	53.0	43.1	31.4**
France	n.a.	47.5	40.1	32.2
Canada	45.7	24.4	29.3	15.0
Fed. Rep. of Germany	1.4***	17.9	19.7	16.8
Norway	n.a.	17.1*	8.5	8.9

* = 1961 figures

** = 1969 figures

*** = 1956 figures

There is no precise information on the extent of military research and development in the Soviet Union. According to SIPRI estimates, the Soviet Union spent, in the 1960s, two thirds to three fourths of the funds consumed by the United States for military R + D. Official US sources maintain that the Soviet Union is now spending more, possibly 40 per cent more than the United States.^{1/}

The information provided in the table indicates that the share of military R + D expenditure of the total public R + D has in most cases declined from the middle of the 1950s up to 1970. The military establishments of the United States and United Kingdom are the most research-intensive, confirmed by the fact that they had the highest shares - 11.3 and 10.4 per cent, respectively, of military R + D of total military expenditure in 1971.^{2/} The higher the level of military spending, the greater, apparently, is the share devoted to military research and development; the largest military establishments are, in other words, also the most research-intensive.^{3/}

The decline of the relative emphasis on R + D in research-intensive military establishments deserves comment: while it may not mean that there is less reliance on research than before, it appears to indicate that civilian R + D is growing faster than military research efforts, consequently signifying the relative demilitarisation of the research community in the longer run. From the point of view of the arms race this does not necessarily mean that the arms competition is slowing down, but that research expenditure is producing better results. According to Wilkes, "the importance of military research and development programmes in providing the fuel for the qualitative arms race by far exceeds their share of the total military expenditure."^{4/}

^{1/} Väyrynen, op.cit., 1978, pp. 181-182.

^{2/} Forsberg, op.cit., 1972, pp. 80-81.

^{3/} Ibid, pp. 18-25.

^{4/} Wilkes, op.cit., 1978, p. 3.

Moreover, military R + D continues to grow in absolute, real terms. Recognising that it is extremely difficult to estimate total funds currently devoted to military research and development, rough estimates point to annual totals in the vicinity of US \$ 40 billion. Others place the global military R + D budget as high as \$ 60 billion (probably an over-estimate).^{1/}

Ruth Sivard has, in turn, estimated that the cumulative funds devoted to military R + D amounted to \$ 336 billion in 1960-77. Her statistics further indicate that the global military R + D efforts absorbed some \$ 13 billion annually, in the early 1960s, increased to about \$ 16 billion in the late 1960s and the early 1970s, and reached a little more than \$ 30 billion in 1977.^{2/} Trends in the military R + D budgets of the leading military powers in Western Europe may be observed from the following table:^{3/}

Table 5 (2): Military R + D expenditure in selected West European countries, 1971-77, national currencies

<u>Year</u>	<u>France</u> <u>FF million</u>	<u>FRG</u> <u>DM million</u>	<u>England</u> <u>£ million</u>	<u>Sweden</u> <u>kronor, million</u>
1971	5367	1230	274	136
1972	5342	1302	328	152
1973	6174	1370	...	160
1974	6885	1404	...	164
1975	7317	1449	...	169
1976	7862	...	...	...
1977	8922	...	826	...

The UK and French figures amounted to about one sixth the US budgetary allocations at the end of the period (about \$ 12 billion). Both of these countries aim at a relatively high degree of self-sufficiency in military research and development, while in the Federal Republic - as well as in Italy, Belgium and Norway - joint transnational projects account for most of the national effort in major weapon development.^{4/}

Overall, there is a clear negative correlation between military spending - which, in turn, correlates with military R + D expenditures - and the rate of domestic investment and economic growth. The military sector is thus absorbing resources from the civilian sector and, furthermore, its growth effect tends to be negative. Military R + D not only takes away financial and technical resources from the civilian research community, but also some of its most skilled and talented manpower by offering lavish benefits. One impact of the global military R + D effort may be illustrated by the following quotation:

^{1/} Thee, op.cit., 1978, p. 109.

^{2/} See, e.g., Ruth Leger Sivard, World Military and Social Expenditures, 1977, Leesburg, Virginia, 1977, p. 9.

^{3/} French, West German and Swedish figures are official figures supplied to the UN Secretary General; see Economic and Social Consequences of the Armament Race and its Extremely Harmful Effects on World Peace and Security. Report of the Secretary General, United Nations, A/32/88/Add. 1, 12 September 1977, pp. 50, 56 and 98. British figures are from ibid, p. 119 as well as from SIPRI Yearbook, op.cit., 1973, p. 293 and Sense about Defence. Report of the Labour Party Study Group, London, 1977, pp. 44-45.

^{4/} SIPRI Yearbook, op.cit., 1973, pp. 277-278.

"It is estimated that at the present time some 25 per cent of the world's scientific manpower is engaged in military-related pursuits. In the past, the fraction has been even higher. Indeed, it has been estimated that of the total cumulative R + D spending since the Second World War some 40 per cent has been directed at achieving military ends. ... Military research and development is overwhelmingly concentrated in the six main military spenders. ... As only a small percentage of the world's scientific and technical manpower is found in the developing countries, it follows that military research and development in the world absorbs perhaps ten times the entire scientific and technological capabilities available in developing countries."^{1/}

There are no reliable estimates on the number of researchers and engineers working for military research and development, but one that is frequently quoted lists some 400,000 persons in this field in the early 1970s, now amounting to some 500,000. It has been further estimated that this figure represents about one half, or a little less, of the total scientific manpower of the world.^{2/}

The present situation may be illustrated by the British experience where there was an allocation of £ 826 million for military research and development in 1977-78. This figure is almost one half of the total government-sponsored R + D, with much of the remainder devoted to the development of nuclear energy and the Concorde project. Military R + D also absorbs investible resources and, perhaps most important, trained scientists and engineers who could directly contribute to the technical progress and competitiveness of civilian industry. In Great Britain 60 per cent of scientists and engineers in the mechanical engineering industry work on arms production, which represents only 7 per cent of the total output of the industry. The situation in the shipbuilding industry is much the same.^{3/} It must be remembered, however, that military R + D expenditure is concentrated in a very few developing as well as developed countries.

Research and development is in general underdeveloped in the Third World. There are very few countries which have comprehensive and consistent R + D policies. The same is also true for military R + D. India is by far the leading developing country in R + D activities: she has close to 100,000 scientists and engineers working on research and development. The following countries come next in order of importance: Egypt (10,665 R + D scientists and engineers), Argentina (3,100), Brazil (7,725), Republic of Korea (6,314), Thailand (6,097), Mexico (5,896), Chile (5,498), Iran (4,896) and Pakistan (4,164).^{4/} It is probably no co-incidence that with the exception of Thailand and Mexico all these countries have extensive programmes to develop nuclear technology and/or are among the most important domestic arms producers in the Third World. Research and development programmes in the Third World thus appear to be closely connected with the size of the military effort.

^{1/} Economic and Social Consequences of the Armaments Race and its Extremely Harmful Effects on World Peace and Security. Report of the Secretary General, United Nations, A/32/88, 12 August 1977, pp. 30-31.

^{2/} Cf. *ibid*, p. 48.

^{3/} and ^{4/} see next page.

Other than these exceptions, most non-industrialised countries do not undertake any military R + D at all. Concerns that guide this particular group of countries in embarking on important military R + D programmes include ensuring a steady supply of weapons through self-sufficiency, the demonstration of independence and strength to allies and opponents by establishing an indigenous weapons development capacity, and, finally, the procurement of specific types of sophisticated weapons which may not be available from industrialised countries. At the same time, not all the weapons based on indigenous development need to be as technologically sophisticated as their counterparts produced in industrialised countries.^{1/}

Because of her special status, India should be subjected to a closer analysis. Her military R + D efforts by the beginning of the 1970s may be illustrated by the following figures (in constant prices):^{2/}

Table 5 (3): Military research and development in India, 1961-72

	<u>1961</u>	<u>1964</u>	<u>1967</u>	<u>1970</u>	<u>1972</u>
Military R + D expenditure, US \$ million	6.6	17.3	15.5	24.4	33.7
Military R + D as a percentage of the military budget	1.0	1.0	1.2	1.6	2.0
Military R + D as a percentage of central government-financed R + D	n.a.	13.0	11.9	n.a.	n.a.

These figures indicate that the Indian military R + D expenditure has grown modestly during the 1960s and much more rapidly in the early 1970s, but its relative level was fairly low if compared with the leading military powers. These figures may be, however, somewhat understated by not including R + D funds devoted to the development of nuclear energy and nuclear technology since a great part of nuclear R + D in India has undoubtedly military relevance. The domestic research on the nuclear issues was started in India as early as 1944, i.e. before the independence, and has been vigorously pursued since then.^{3/} In the early 1970s more than 2200 scientists and engineers worked in the Indian Department of Atomic Energy. In 1973, a total of 2500 scientists and engineers as well as 4600 technical assistants worked in the Indian Defence Research and Development Organisation. In addition, to them, scientists and engineers must have accounted for a large proportion of the 40,000 persons working at Hindustan Aeronautics Ltd. at Bangalore.^{4/} A more recent source of information gives the following concise description of the Indian military R + D system:

^{3/} Sense About Defence ..., op.cit., 1977, pp. 44-45.

^{4/} The source of data is Statistical Yearbook 1977, United Nations, New York, 1978, pp. 921-922.

^{1/} SIPRI Yearbook, 1973, op.cit., pp. 264-266.

^{2/} Forsberg, op.cit., 1972, pp. 978-982.

^{3/} Accounts of the Indian nuclear research and development programme have been published, for instance, by Onkar Marwah, India's Nuclear Program: Decisions, Intent, and Policy, 1950-1976, William Overholt (ed.), Asia's Nuclear Future, Boulder 1977, pp. 161-196, and K. Subrahmanyam, The Indian Nuclear Test in the Global Perspective, K.P. Misra (ed.), Foreign Policy of India, New Delhi, 1977, pp. 185-204.

^{4/} See Herbert Wulf, Indian: Militarisierung und der Aufbau einer autonomen Rüstungsproduktion, Internationales Asienforum 3, 1975, pp. 293-296.

"Employing 3000 scientists and 5000 technicians and controlling nearly three dozen laboratories, India's Defence Research Organisation has become a major enterprise behind the manufacturing effort (aiming at the modernisation of arms and self-reliance). It is engaged in a number of various projects but, according to official statements, has identified certain areas of major thrust for the next five years. These are missiles and rockets, aeronautics and avionics, electronics and radar, and naval research."^{1/}

In addition to the Indian Defence Research and Development Organisation, military research is carried out in a number of other institutions including the Administrative Staff College of India where the management problems of the military establishment are explored, and the Tata Institute of Fundamental Research which is involved in several military research projects, i.e. in a study on an air defence ground environment system.^{2/}

According to Wulf's estimates, Indian military R + D expenditures in the financial year 1971-72 would have added to 695 million rupees, or a little more than 100 million dollars, which amounts to about 35 per cent of the total R + D expenditure of India,^{3/} a figure substantially higher than that provided by SIPRI.

India will probably continue to devote considerable sums to military R + D in the future, as borne out by a statement by the Defence Minister, Jagjivan Ram, in July 1978 in order to strengthen self-reliance in the production of weapons. This statement included the point that India would buy weapons abroad only in instances where the seller agrees to provide technical information enabling their domestic production.^{4/}

The institutional set-up of the military R + D system varies from one country to another. In most countries, the bulk of military research and development is carried out in defence research organisations established by the state. These institutions normally co-operate with university institutions and arms manufacturers. The US practice is, however, quite different in this respect because a considerable part of military R + D is performed by business firms on the basis of contracts received from the Department of Defense. In the fiscal year 1977, the leading business contractors were Rockwell International Corp. (\$ 513.6 million), General Electric Co. (\$ 510.9 million), General Dynamics Corp. (\$ 492.0 million), McDonnell Douglas Corp. (\$492.0 million) and Boeing Co. (\$ 489.8 million). In addition to these sums, one has to take into account the Independent Research and Development Program (IRD + P) which is largely financed by the Department of Defense but reported as company-financed R + D in many statistical sources.^{5/}

^{1/} See Majaraj K. Chopra, India's Defense Policy and Infrastructure, Military Review, May 1978, p. 35.

^{2/} Ibid, p. 40.

^{3/} Wulf, op.cit., 1975, pp. 293-296.

^{4/} See, e.g. Hindustan Times, March 28, 1978 and Indian Express, July 6, 1978.

^{5/} On this programme, see Judith Reppy, Defense Department Payments for "Company-Financed" R + D. Research Policy 4, 1977, pp. 396-410.

The leading US non-profit institutions carrying out military research and development were, during the fiscal year 1977, the following:^{1/}

Table 5 (4): Top ten non-profit institutions carrying out military R + D in the United States in the fiscal year 1977

<u>Rank among all military R + D contractors</u>	<u>Institution</u>	<u>Value of contracts, millions of dollars</u>
16	John Hopkins University	117.5
17	Massachusetts Institute of Technology	108.2
28	Mitre Corp.	57.4
30	Charles Stark Draper Labs. Inc.	45.0
43	Aerospace Corp.	28.7
51	SRI International	23.1
54	University of California	20.0
63	Rand Corp.	16.4
68	Institute for Defense Analysis	14.7
69	IIT Research Institute	14.6

The size and significance of these military R + D institutions can be illustrated by the fact that the entire military R + D budget of Finland has varied between US \$ 5-6 million during the last few years, thus not even figuring among the top 100 individual military R + D contractors in the United States.

5.3 Transnational Collaboration in Military R + D

Transnational collaboration in the armaments sector has not gone very far in the case of military R + D, which appears to be the most protected subsector of the military establishment at the national level. As the most important technological source of the qualitative arms race, military R + D needs to be protected in order to maintain the competitive edge of a country over its rivals. Dominance in research and development in general is a means of achieving monopolistic advantage, which encourages both transnational corporations and governments to keep its results within their own confines.^{2/}

The process of acquiring weapons normally consists of various stages, starting from research and proceeding through development, testing and evaluation to production. In the national context these stages are normally integrated in a line in which stages are followed in consecutive order, or the project may be terminated, for example, in the evaluation stage. In the transnational context, the pattern of acquisition is less ordered. Co-operation usually involves only the final stage of production, as, for instance, in subcontracting and licensed production carried out in foreign countries.

^{1/} See, Top 500 Research, Development, Test and Evaluation Contracts, Fiscal Year 1977, Aviation Week and Space Technology, September 4, 1978, pp. 197-200.

^{2/} See Björn Hagelin, Militär-industriellt samarbete i Väst-europa, Stockholm, 1977, pp. 13-14, and Charles M. Herzfeld, The Military R + D Process - A View from the Industry, Bulletin of the Atomic Scientists, December 1978, pp. 33-40.

Exceptions may encompass development, or both research and development combined with joint production. There is often a cumulative pattern in the sense that joint research and development at the transnational level seldom exists without the subsequent co-production.^{1/}

It is possible to distinguish three principal types of arrangements in the integration of military R + D programmes into projects of weapons acquisition:

- Direct purchase of the weapons system which allows the purchasing state to evade the R + D costs as well as the domestic production base needed for the development and production of a similar system.

- Competitive R + D with licensed co-production is the arrangement currently favoured by the United States. This alternative involves the competitive development of a weapons system of which the best or the most suitable model is chosen for co-production. The "arms deal of the century", i.e. the F-16 project, is an example of this type of arrangement which leads, however, to higher costs than purely national projects.

- Co-operative R + D is characterised by the teaming up of two or more states to design and develop common equipment from scratch. This arrangement has been used mostly in joint ventures between West European governments and arms manufacturers.^{2/}

The difficulties involved in joint R + D activities in the military sector may be illustrated by the following quotation, referring to the situation in Western Europe: "Then there is co-operative research and development which is ideal, in principle, but concerning which it is very difficult to get joint agreement on requirements and schedules. But with lead times of 8 to 12 years, there can be no rapid results. This poses a special political problem, since this kind of time scale goes far beyond the foreseeable life of any government or elected parliament."

Both in the direct purchase of weaponry and in licensed production, joint R + D, with all its benefits and costs, is avoided. In the co-production option, research and development may be either competitive or non-competitive. In spite of the political and economic problems involved, transnational collaboration in weapons procurement is nevertheless moving to earlier conceptual stages than before.^{3/}

^{1/} Hagelin, op.cit., 1977, pp. 14-15.

^{2/} See, e.g., NATO Standardisation: Political, Economic and Military Issues for Congress. Report to the Committee on International Relations, House of Representatives, Washington, D.C., March 29, 1977, pp. 2-4.

^{3/} See European Armaments Procurement Co-operation, Political Affairs Committee, European Parliament, Document 83/78, 8 May 1978, pp. 16-17.

The leading countries involved in transnational collaboration in military R + D as well as in co-production of weapons systems are the West European examples of France, UK and FRG - primarily in the area of aircraft and missile systems. Joint R + D activities across the Atlantic are very rare, although attempts at standardisation of military technology are being actively pursued.^{1/} In practice, transnational collaboration amounts to enterprise co-operation in joint military projects: the result is an increasing correspondence between the military procurement budgets of Western European countries engaged in co-production,^{2/} and interdependent military R + D, with some impact on the stability of economic relations between them.^{3/} Various governmental institutions promoting such collaboration have proliferated in recent years,^{4/} including in particular the European Defence Procurement Secretariat (December 1975) and a detailed proposal in May 1978 to launch a European Armaments Procurement Agency.^{5/} Limited R + D co-operation between ICs and DCs through co-production projects is in practice the only type in existence. Exceptions relate to the technological collaboration between Western scientists and South African research workers in developing uranium enrichment technology, and in ground-to-air missile systems (the Cactus project).^{6/} The wide-spread application of new technologies developed in ICs for use in counter-insurgency warfare in the developing countries has been a well-publicised phenomenon.^{7/}

5.4 The Impact of Military R + D on Technological Development

While it has not been possible here to embark upon any extensive analysis of the military R + D policies of the United States, the Soviet Union or other major countries,^{8/} it is necessary to point out that military R + D has been, and will be even more in the future, an important factor in international strategic and tactical competition in building up military arsenals. The development of new weapons through military R + D efforts has always contributed to the instability, real or perceived, of relations between the major adversaries. All the relevant parties fear technological breakthroughs by adversaries which may threaten their international position and security.

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- 1/ See, e.g. Thomas A. Callaghan, Jr., Standardisation. A Plan for US/EUROPEAN Co-operation. NATO Review 4, 1975, pp 11-15, and Thomas A. Callaghan, Jr., No Two-Way Traffic without a Two-Way Street. NATO Review 5, 1977, pp. 22-27.
- 2/ Data originate in Hagelin, op.cit., 1977, pp. 54-55 and 80-81.
- 3/ See, e.g. Michael Kidron, Western Capitalism Since the War, Harmondsworth 1977.
- 4/ European Armaments, op.cit., 1978, pp. 8-16.
- 5/ Ibid, pp. 30-36 and passim. See also Hagelin, op.cit., 1977, pp. 29-34.
- 6/ See, e.g. Signe Landgren-Bäckström, Southern Africa. The Escalation of a Conflict, SIPRI, Uppsala, 1976, pp. 131-132 and as well Jens Klopp, Peter Körner, Reinhard Saloch and Hans Walden, Verdeckter Rüstungstransfer. Beiträge der BRD zur militärischen Stärkung der Republik Südafrika (II). Blätter für deutsche und internationale Politik 8, 1976, pp. 928-942.
- 7/ See Michael T. Klare, War Without End. American Planning for the Next Vietnam, New York, 1972, pp. 119-141; see also pp. 213-240.
- 8/ See, e.g., David Holloway, Military R + D in the Soviet Union. Bulletin of Peace Proposals 1, 1978, pp. 53-56, and Judith Reppy and P.A. Long, US Military R + D: A Set of Questions. Bulletin of Atomic Scientists 5, 1978, pp. 34-41.

In addition to its strategic implications military research and development has a profound impact on the technology policies of countries with the heaviest military burden. The allocation effect, the transfer of scarce resources from civilian to military research, contributes to the emergence of a type of dual society where high technology is applied in the military, nuclear and space sectors, while technological knowledge available in civilian sectors that are unrelated to the military establishment is less effective and modern. In fact, one may hypothesise that the higher the military burden and the lower the overall technological and economic development of the country, the more distorted is the economic and production structure.

In these circumstances the military R + D sector forms a technology-intensive bridge-head which forms few connections with the surrounding civilian economy. This state of affairs prevails even in developed economies, as illustrated by the following quotation: "In the recent period of science-based military technology, the civilian utility of these efforts has become so much smaller that expenditure on military technology mainly diverts funds and technical manpower from civilian efforts. This change relates closely to the greatly increased sophistication and specialised character of military technology which the application of science has itself brought about. There remains substantial controversy over the precise amount of 'civilian spin-off' from military and space research and development. Certainly there is some spin-off, as witness the civilian jet aircraft which followed from the military aircraft developments of the 1940s and 1950s. But specialisation has limited such spin-off, and a generous estimate is that perhaps 20 per cent military and space R + D has significant civilian utility."^{1/}

Military R + D is thus becoming increasingly isolated from the civilian research community, especially in terms of the civilian applicability of its findings. As a result of growing research and technology-intensity, it is also providing less and less employment compared with most civilian sectors of the economy. The employment effect of military production has been relatively slight, and is declining in both relative and absolute terms.

Talk of "spin-off" has received short shrift from some quarters: "I have little sympathy with the arguments made on behalf of 'spin-off' to justify primary allocation of resources to military-related R + D. ... 'Spin-off' is the term applied to discoveries, techniques, or devices which are developed in the course of defence-related R + D and which have, or are released, for their industrial or other civil application. Justifications for various kinds of defence-related R + D or appeals for their support are often made in terms of their past or potential spin-off. This argument is actually irrelevant to the pros and cons of any defence-related R + D. Spin-off is fortuitous and unlooked for, though greater or lesser efforts may be devoted to its efficient utilisation. It is certainly both by definition and in reality only a fraction of the output produced. It

^{1/} P.A. Long, Science and the Military, in Civilisation and Science in Conflict or Collaboration? A Ciba Foundation Symposium. Amsterdam, 1972, pp. 126-127.

is thus simply silly to argue that spin-off justifies the disposition of resources to military R + D, rather than, if that were really desired, the entire reallocation of effort by a nation directly to the concern or process that has come to pass only indirectly as a spin-off.^{1/}

The reverse argument for civilian R + D "spin-off" might also be advanced: "To the limited extent spill-over exists between military and civilian technological developments it operates in both directions. ... It is curious that none of the advocates of the spill-over benefits of military technology ever seems willing to accept the argument that, which follows directly from the same logic, if the transfer of technology between these two sectors is so high, we could just as well concentrate our resources on civilian technological development and let military technological advance proceed as a result of spill-over."^{2/} It appears that "spin-off" effects are a spurious justification for increasing resource allocations to military research.

The distorting role of military R + D is particularly visible in developing countries, although military R + D in the Third World is concentrated in only a few countries, i.e. to those which are developing their domestic military industry. India and Brazil - and, in a different category, South Africa and Israel - are examples of those less industrialised countries which have embarked upon indigenous military production and which have developed a sizeable military R + D establishment to support this industry through innovations in weaponry and military technology. The emphasis has been on the aircraft industry, technologically the most developed branch of arms manufacturing. As a result, leading aircraft companies form the backbone of the military-industrial complexes of the countries concerned. Atlas Aircraft Corp. in South Africa, Israeli Aircraft Industries in Israel, Empresa Brasileira de Aeronautica S.A. (Embraer) in Brazil and Hindustan Aeronautics Ltd. in India are leading examples.

The impact on development of this research is frequently negative. Military R + D in developing countries is almost invariably geared towards high-technology products which originate in industrialised countries. No discussion has been initiated so far on "appropriate military technology". While the usefulness of high-technology weapons for the development of industrialised countries may be legitimately questioned, in the developing countries the consequences are even more distorting because this kind of military technology cannot satisfy local development needs, and instead reduces opportunities to meet them. Local creativity in achieving improved production is stultified and replaced by a more or less automatic introduction of alien military technology.^{3/}

^{1/} Milton Leitner, The Conversion Potential of Military Research and Development Expenditure, Wilfried von Bredow (ed.), Economic and Social Aspects of Disarmament, Varanasi, 1974, pp. 50-61.

^{2/} Lloyd J. Dumas, Economic Conversion, Productive Efficiency and Social Welfare. Peace Research Review 3, 1977, pp. 26 and 50. The technological fall-out in both directions is emphasised by Ingemar Dörfer, System 37 Viggen: Science, Technology and the Domestication of Glory in Frank B. Horton et al. (eds.), Comparative Defense Policy, Baltimore, 1974, pp. 469-471.

^{3/} See, e.g. Asbjørn Eide, Arms Transfer and Third World Militarisation. Bulletin of Peace Proposals 2, 1977, p. 101.

Apart from the misallocation of resources involved, the role of military technology in producing external dependence (analysed earlier) should receive greater attention. In the field of science and research, it is not only a problem of material technological dependence on foreign equipment and raw materials, but also of dependence on theories and patterns of thinking which do not adequately reflect local conditions.^{1/}

The sophistication of the military technologies transferred from centre to periphery nations reflects the large military R + D investments of the major arms exporters.^{2/} The militarisation of the Third World is also increasingly conditioned and even caused by the dynamics of arms production in the major arms manufacturers; the military establishment and the use of force in developing countries becomes, in other words, a reflection of the armaments dynamics in the centre: "Third World countries take part in the technological competition only as clients of the greater powers willing to sell or donate them the necessary arms or production facilities. The precise form that the transferred technology takes is therefore shaped by the dialect of the arms races taking place between the supplying (industrial) rather than the receiving (peripheral) countries. It is distorted in the direction of military hardware - like advanced jet aircraft or tanks - which fits with the existing production patterns of the former rather than the latter."^{3/}

The pattern of militarisation existing in the centre is thus exported to the Third World where it tends to increase inter- and intra-national disparities of economic and military character. The compulsion to develop and import weapons gears the national economy of developing countries towards the international market, and therefore away from self-reliant production for basic needs.

5.5 Towards a Policy of Conversion

Analysis of the role of military R + D from different perspectives has led to the conclusion that it is one of the most important sources of the technological arms race, reinforcing the concentration of economic and technological power in industrialised countries and distorting, through the transfer of sophisticated military technology, the economic structure and priorities of developing countries. Furthermore, there is little evidence that military research has resulted in any significant spin-offs to civilian industry. More gains would have been made if the funds allocated to military R + D had been directly invested in civilian research and development. Against this background, there appear to be good reasons for converting the resources devoted to military R + D to civilian uses. It has even been argued that this sort of conversion is easier in economic

1/ See, in particular, Chadwick Alger and Gene Lyons, *Social Science as a Transnational System*, Interdiscipline 2, 1974, pp. 136-145.

2/ Sivard, *op.cit.*, 1977, p. 8.

3/ See Robin Luckham, *Militarism and the Internationalisation of Capital*, IDS Bulletin 3, 1977, p. 40, as well as Raimo Väyrynen, *Transnational Corporations and Arms Transfers*, *Instant Research on Peace and Violence* 3-4, 1977, pp. 145-166, and Dieter Senghaas, *Weltwirtschaftsordnung und Entwicklungspolitik, Pädoyer für Dissoziation*, Frankfurt am Main, 1977, pp. 234-236.

and technical terms than the conversion of industrial resources to cut down the production and deployment of weapons.^{1/} Such considerations, however, tend to ignore the psychological importance of a large military R + D establishment as a symbol of political and military power as well as a form of guarantee against unexpected sources of aggression, thereby over-estimating the use of reallocating military R + D funds.^{2/}

Increasing interest in the conversion policy has attracted many scholars and engineers to draft detailed lists of military products and their alternative civilian uses,^{3/} showing that, with the exception of the most specialised military technologies, alternative civilian applications are not difficult to identify. The main obstacle lies in the inertia of existing economic and political structures.

Arguments have been advanced that the large investments in military R + D tend to lead to stagnation within the research community, making it a hierarchical and secretive establishment. The release of resources from military R + D to alternative uses would, therefore, increase international scientific co-operation and also change its character in a more positive direction. Others have emphasised that the conversion of military R + D establishments in industrialised countries would release resources for use in developing countries.^{4/} Counterarguments have criticised such ideas as utopian, adducing that in practice hardly any real transfer of resources from the centre to the periphery would take place.^{5/}

^{1/} Leitenberg, op.cit., 1974, pp. 45-54.

^{2/} See, e.g., Sverre Lodgaard and Marek Thee, *High Military Technology, Security, and Arms Control*, Bulletin of Peace Proposals 4, 1977, pp. 293-294.

^{3/} See, e.g. Wilkie, op.cit., 1978, pp. 7-9 and *Sense and Defence ...*, op.cit., 1977, pp. 159-163.

^{4/} See, e.g. G. Domin and H.-H. Lanferman, *Wissenschaftspolitik und Abrüstung*, in Herbert Meissner and Karlheinz Lohs (eds.), *Abrüstung, Wissenschaft, Verantwortung*, Berlin, 1978, pp. 52-76.

^{5/} Leitenberg, op.cit., 1974, p. 48.

CHAPTER 6: SELF-RELIANCE, DEPENDENCE AND MILITARY TECHNOLOGY

6.1 Self-Reliance

The concept of self-reliance refers to a doctrine, to a way of thinking about international relations, and to a strategy for changing the existing unequal international division of labour and its national roots. As an ideology or doctrine, self-reliance belongs to the field of psychopolitics where the aim is the attainment of self-confidence. As a strategy the policy of self-reliance is a way of contesting centre-periphery relations, as a tool for strengthening the weak and the poor in the periphery. In essence, self-reliance aims at breaking down coercive relations of dependence and alleviating the present competitive character of international economic relations; self-reliance is not a strategy of expansionism: the self-reliance of one country cannot be attained at the expense of the self-reliance of others.^{1/}

The policy of self-reliance has two facets: the national and the transnational. In the national setting, self-reliance signifies the mobilisation of the natural and human resources of a country for its integrated development, and for the satisfaction of the basic needs of the masses. In the domestic policy of self-reliance, the thrust has to be endogenous, with the initiatives coming from inside, from those in need. The attainment of self-reliance presupposes, however, the intensification and institutionalisation of co-operation between developing countries. Hence the concept of collective self-reliance, which represents, through the advocacy of new co-operative coalitions within the periphery, a clear-cut alternative to the present dependent type of modernisation.^{2/}

If the policy of self-reliance forms part of a strategy of challenging centre-periphery relations, then one of the main objects of this contest has to be the breaking of existing chains of technological dependence: "Technological dependence is most critical, not only in that it constitutes a very effective form of exploitation, but also in reproducing patterns of production, circulation and consumption inadequate for a socially satisfactory evolution of presently underdeveloped countries. The usual mechanisms and content of technology transfer, mostly supplied by transnational corporations, contribute to the production of consumer goods for the privileged minorities of Third World countries as well as to unemployment. It also directs the demand for technological inputs outward, thus causing stagnation of the domestic innovative potential."^{3/}

1/ Johan Galtung, *Self-Reliance: Concept, Practice and Rationale*, Chair in Conflict and Peace Research, University of Oslo, Papers No. 35, Oslo, 1976, pp. 2-4; see also Peter O'Brien, *La autodeterminación como estrategia de desarrollo*, Comercio Exterior 7, 1976, pp. 757-761.

2/ See Enrique Oteiza and Francisco Srcovich, *Collective Self-Reliance: Selected Issues*, International Social Science Journal 4, 1976, pp. 664-666.

3/ Ibid, p. 668.

Such views argue that self-reliance can be gradually achieved by weakening existing dependence chains of various kinds. Others maintain that genuine self-reliance presupposes the initiation of the process from inside, from existing social and economic structures, only later proceeding to deal with international aspects of the policy of self-reliance. In the domestic realm the focus should be on the initiation of industrialisation programmes to improve rural productivity and to help the poor urban masses. Internationally those states that have embarked on genuine self-reliant development must establish, according to Amin,^{1/} programmes of mutual assistance, and modify the international division of labour between the capitalist and Third World countries to the advantage of the latter. At any rate, financial and technological dependence patterns lie at the heart of the problem, as they produce the major distortions in the economies of the weaker countries.

Trade in arms and military technology tends to produce both financial and technological dependencies. In the former area, the growing debt burden of the developing countries is one of the main obstacles to self-reliance. The debt burden is worsened not only due to expenditures on equipment imports but also as a result of payments for military technology, in the form of production licenses, experts and various inputs and intermediary goods. In addition, those developing countries in which transnational arms manufacturers are operating have to allow the repatriation of profits, transfer pricing and other transactions which are difficult to control: "It is increasingly often pointed out that imports for military purposes generate no income and no exports with which to service the added debt further aggravating the long-term effect on the balance of payments. For some developing countries facing acute debt-servicing problems, the balance of payments aspect of the costs which the world-wide character of the arms race imposes on all countries is particularly salient."^{2/}

Peru might be quoted as an example of a country in which arms imports have worsened the debt situation in the most blatant fashion. In 1976 the regime of Morales Bermudez spent some \$ 600 million on the purchase of arms, an amount equivalent to one third of Peru's exports. In 1977 the value of arms purchased by Peru amounted to around \$ 350 million. At the same time, Peru faced considerable difficulties in servicing her debt, currently an estimated \$ 5.5 billion.^{3/}

Somewhat more general findings may be obtained from a Swedish study using regression analysis in explaining the debt burden of developing countries for two separate periods, viz. 1968-70 and 1971-73. The results of the study showed that in both periods GNP and arms imports were the two determining factors in explaining the variation in the debt burden of developing countries. Approximately one half of the debt burden may be attributed to GNP and arms imports.^{4/}

^{1/} See Samir Amin, *Self-Reliance and the New International Economic Order*, Monthly Review 3, 1977, pp. 1-21, esp. pp. 14-19.

^{2/} *Economic and Social Consequences of the Armaments Race and its Extremely Harmful Effects on World Peace and Security*. Report of the Secretary General, United Nations, General Assembly, A/32/88, New York, 1977, p. 51.

^{3/} and ^{4/} see next page.

The present patterns of arms sales serve the needs of capital accumulation of the major arms producers and hence in fact increase the financial and economic dependence of the importing countries. The reduction in arms transfers would, *ceteris paribus*, decrease the debt burden of the developing countries and in that way increase their opportunities to embark upon a path of the self-reliant development.

Military technology and its transfer has at least an equally important role in creating asymmetric dependence patterns between the centre and the periphery. When military technology may be separated from civilian technology it is likely to have worse effects owing to its specialised character. The dependence on military technology is difficult to replace or reject simply because of the lack of credible alternatives. The significance of the technological factor has been underlined, for instance, by Mary Kaldor who argues that the present military technology and military organisation is such that, once transferred to a developing society, it starts to shape the local society in a capitalist direction which contradicts its original social and economic character.^{1/} In other words, technologies borrowed from the West are "necessarily carriers of capitalist relations of production".^{2/}

Consequently, disarmament becomes a critical element in any strategy of disengagement for those developing countries wishing to decrease their dependence on arms suppliers. In practice this could happen through the achievement of self-reliance in the military sphere. This would mean the establishment of a purely defensive military force which would be based on local technologies and concordant with the existing social structure. Some authors argue that the resultant decentralised army structure in a self-reliant country would increase its defence capability because "a self-reliant country would have to be conquered part by part, but these parts will have much higher capacity to organise paramilitary, guerilla-type resistance as well as non-military forms of defence even after an occupation has taken place. ... In other words, just as there is a basic compatibility

3/ See George Philip, *The Peruvian Tightrope*, *The World Today* 12, 1977, p. 468 and Banks to Roll over Peru Debt, *International Herald Tribune*, June 3-4, 1978.

4/ See Tuija Meisaari-Polsa, Ingegerd Municio and Synnöve Svartvadet, *Utvecklingsländernas utlandsskulder - en data-analys*, Institute of Political Science, University of Stockholm (mimeo), Spring 1978.

1/ Mary Kaldor, *The Military in Development*, *World Development* 6, 1976, pp. 459-482.

2/ Amin, *op.cit.*, 1977, p. 17. In this connection it is appropriate to quote Mary Kaldor saying that "the transfer of military technology represents the transfer of a social system. In the case of the weapons system, the structure of recipient armed forces is delineated rather precisely: and this, in turn, has important implications for the political orientation of the soldier and the strategy of development. Partly because of the need for an industrial base to service the weapon system based force structure and partly because of the ideology associated with the weapon system - the glorification of industrial technology - the armed forces play an important role in support of governments favouring a development model aimed at imitating metropolis society. This is the significance of the military coup." See Mary Kaldor, *The Significance of Military Technology*, *Bulletin of Peace Proposals* 2, 1977, p. 122.

between capitalistic growth and modern hierarchical, technocratic military organisation there is also a basic compatibility between self-reliance as the basic mode of production and paramilitary/guerilla/satyagraha forms of defence whereby the civilian population is mobilised and becomes less vulnerable and less clientelised through dependence on vertical military organisations that in turn depend on centre countries for supplies of military hardware and software.^{1/}

However, creation of this type of "appropriate" defence system appears unlikely in most developing countries. Present trends, on the contrary, demonstrate an increasing reliance on military technology produced in, and transferred from, the industrialised countries, especially from the West. According to one prediction, the following changes are likely to occur in the 1980s: (a) the present trend toward licensed production will accelerate; (b) licensed production of the new technologies, such as first-generation precision-guided munitions and area weapons, will be widespread, but at the same time (c) more nations will be able to achieve independence in weapons production. The trend towards independence, however, is likely to affect only a few countries, while most remain dependent on the great powers for advanced weapons systems and military technologies.^{2/}

In earlier sections, it was pointed out that relative independence in weapons production has been achieved only by such countries as Brazil, India, Israel, South Africa, Taiwan, Argentina and South Korea. It is most probable that in the 1980s this club would be enlarged by only those developing countries able to meet the same criteria of large size, the existence of an industrial infrastructure, and a frequently coercive political system. In other words, only those countries that lie somewhere in-between the categories of industrialised and less developed countries in the international hierarchy, and which often have regional ambitions, may assume a measure of self-sufficiency in their military production.

Brazil is a good example of this development, in addition to the frequently quoted case of India. It has been claimed that Brazil now has the leading military industry in the Third World; but is it self-sufficient? Brazil is a significant producer of military aircraft, naval craft, armoured personnel carriers and small weapons. The Brazilian military-industrial complex consists of a number of large companies specialised in the production of military hardware. One of the pioneering corporations is Embraer (Empresas Brasileira de Aeronautica S.A.), the largest general aviation manufacturer outside the United States in terms of the volume of production.

Embraer makes 11 different types of aircraft in all, in 50 distinct models which, in the military field, include transport planes, maritime patrol aircraft, fighters, trainers and other military aircraft. Many of these models are of indigenous design, but the avionics and engines are in many cases imported from North America (in the case

^{1/} Galtung, op.cit., 1976, p. 14.

^{2/} See Anne Hessing Cahn and Joseph J. Kruzel, *Arms Trade in the 1980s*, in Alexander R. Vershbow (ed.), *Controlling Future Arms Trade*, New York, 1977, pp. 79-82.

of the engines the exporters are Lycoming, Pratt and Whitney and General Electric). More extensive transnational collaboration has taken place between Embraer, itself in the process of swallowing two minor aircraft producers in Brazil, and Northrop, Piper, Aeronautica Macchi and in the 1950s with Fokker. Embraer, which employed some 3600 workers in 1975, is 51 per cent owned by the Brazilian government, with the remaining shares in private hands, the second-largest shareholder being Volkswagen do Brazil.^{1/}

Embraer is located at Sao José dos Campos, in the vicinity of Sao Paulo. This manufacturing centre of some 250,000 inhabitants is the real centre of the Brazilian military-industrial complex. Engesa (Engenheiros Especializados) is located in the same centre and is now one of the main suppliers of combat vehicles - including Urutu, Cascavel, Jararaca and Sucuri armoured personnel carriers - to the Brazilian Army and Marines. The carriers are also of indigenous design, while most of their engines are produced by Mercedes Benz do Brazil. Avibras is a private enterprise manufacturing solid-propellant artillery rockets, but is also working with guided missiles. In general, the missile industry is much more dependent on foreign military technology. Comissao Central de Misseis is producing Roland and Cobra missiles with the aid of French and West German licenses. Various air defence systems are manufactured in co-operation with the French Thomson-CSF.^{2/}

One of the aims of collaboration with Thomson-CSF is to develop a national electronics industry, so far one of the weak points in the Brazilian military-industrial complex. There are domestic companies turning out military electronics, but at the same time such transnational electronics giants as Philips, AEG-Telefunken, L.M. Ericsson, General Electric and Texas Instruments are active in the industry. The Brazilian government has, however, begun the process of indigenising the electronics industry by setting relatively high limits for the local content of components to be produced, and by inducing the transnationals to search for Brazilian partners though the promise of winning government contracts and finance.^{3/}

West European transnational corporations in general are actively involved in the Brazilian military industry. One example is Aérospatiale of France which has purchased a minority interest in Helibras, a newly established Brazilian helicopter manufacturer. The procurement policy of the Brazilian government favours private companies at the expense of government-owned military factories and the most favoured solution appears to be a coalition between a foreign company and a private domestic firm. At the same time, there are governmental institutions which aim at co-ordinating and fostering domestic arms

^{1/} Embraer: Brazil's Aircraft Industry, Business Week, October 16, 1978, pp. 39-40, and Peter Lock and Herbert Wulf, Register of Arms Production in Developing Countries, Hamburg, 1977, pp. 38-40 and 42.

^{2/} Lock and Wulf, op.cit., 1977, pp. 40-41; Larry Rohter, Brazil is Making Major Drive for Military Self-Sufficiency, International Herald Tribune, November 28, 1977; and Bob Levin, Brazil: A Call to Arms, Newsweek, February 26, 1979, p. 47.

^{3/} Lock and Wulf, op.cit., 1977, p. 36 and Brazil: Even Components Must be "Brazilianised", Business Week, January 24, 1977, p. 34.

production. One of these co-ordinating state bodies is Diretoria de Fabricação e Recuperação (DFR). More important, however, is IMBEL (Industria de Material Bélico do Brazil), which was established as a government holding company to co-ordinate and modernise the Brazilian manufacture of arms.^{1/}

There can be no doubting the Brazilian government's classic to achieve a relatively high degree of self-sufficiency of arms production. The boom in production in fact began in March 1977 when the government cancelled her 25-year old military treaty with the United States as a response to the latter's strictness on domestic human rights policies. It was seen that Brazil's potential as a regional power centre could not be realised without a full-fledged capacity to produce arms and military technology. Nevertheless, one cannot conclude that Brazil has already achieved the degree of military self-sufficiency she is seeking for. On the contrary, her military industry continues to be strongly dependent on the military know-how and technology produced and transferred by US and West European transnational corporations. It remains to be seen whether Brazil will ever become, in practice, a relatively autonomous producer of arms.

A concluding, qualifying observation on Brazil's policies should be made: the military self-sufficiency pursued by the country up to now cannot be equated with any genuine policy of self-reliance. These two approaches are often at variance with each other, based as they are on different economic and political strategies. The policy of self-sufficiency - relying on the formation of national monopolies, private or public, allied with the state machinery, i.e. dependent on the concentration of economic and political power - contrasts with the policy of genuine self-reliance, and appears to be the only plausible outcome in a country aspiring to regional preeminence. The following section attempts a more detailed examination of the internal characteristics and external policies of regional power centres, to see how the development of the military apparatus and the strategy of industrialisation interact in them.

6.2 Regional Power Centres and Regional Blocs

6.2.1 Introduction

One of the central features in the transformation of the international system has been the stabilisation of the position of particular regional power centres and the emergence of new ones, as one aspect of the dynamics of international relations in which the relative strength of certain powers declines and new ones gradually emerge. A distinct feature of the present transformation is, however, the fact that regional powers are now emerging outside the traditional core of the international system, i.e. in the Third World, thereby following the Japanese rather than the European example of growth.

^{1/} Lock and Wulf, op.cit., 1977, pp. 36 and 41, as well as Levin, op.cit., 1979, p. 47.

The emergence of new power centres has a material origin, as one manifestation of the international division of labour and resources. A necessary precondition for their growth has been the development of an extensive industrial infrastructure, often through the import-substitution path. As a minimum, they have been able to accumulate sufficient financial resources to back up their policy, by selling oil or other raw materials. Economic strength alone has seldom been sufficient for their emergence, having had to acquire, in addition, military power into their hands, either by indigenous efforts or by importing modern arms and military technology. In some cases the power centres make attempts to extend their capacity beyond conventional weapons to acquire nuclear capability.^{1/} Status and security considerations both play a major part in the decision to adopt the nuclear option, with the status impetus proving particularly difficult to reverse.^{2/}

A regional power centre may be defined as an actor which "exerts a regional hegemony akin to the global dominance of an imperial power, but at a subsystemic level. It plays an important intermediate role in a sphere of influence by dominating a region while still being subordinate to major actors at the centre of global feudal networks." This definition may not be sufficiently precise in covering the thrust towards external expansion of a regional power centre, or its relations with the metropolises of the world. It refers, however, to the decline of continental integration in Latin America, Africa, Middle East and Asia and to the partition of these regions into competing regional blocs whose leading powers are sometimes allies, sometimes rivals.^{3/} One may say that the emergence of regional power centres and blocs around them is a manifestation of the unequal development of the international system.^{4/}

The very notion of a regional power centre carries the implication of a compulsion to expand economic, political and military power to neighbouring countries, to become a patron of a regional bloc. On the other hand, regional power centres are almost invariably dependent on the technology, arms and capital of global power centres. These dependencies of predominantly economic and technological character are often accompanied by political implications. Regional blocs may be subtly persuaded to promote the interests of the global powers.

^{1/} See Robert Pfaltzgraff, *Emerging Major Power Relationships, Implications for the American Military in the Late Twentieth Century*; *Air University Review* 3, 1977, pp. 5-8.

^{2/} Richard K. Betts, *Paranoias, Pygmies, Pariahs and Non-Proliferation*; *Foreign Policy*, No. 26, 1977, pp. 164-167; (the quotation is from page 164).

^{3/} Timothy M. Shaw, *Kenya and South Africa: "Subimperialist" States*; *Orbis* 2, 1977, pp. 376-378; (the quotation is from page 376).

^{4/} See, e.g. Stephen Hymer, *The Multinational Corporation and the Law of Uneven Development*, Jagdish Bhagwati (ed.), *Economics and World Order: From the 1970s to the 1990s*, New York, 1972, pp. 113-140.

Notwithstanding these qualifications, the emergence of regional power centres which have some degree of political and economic independence, has led to the creation of a system of hierarchic dependencies and control structures.^{1/} These structures and dependence chains are maintained by means of military and civilian technology, financial as well as political and ideological control.

Regional power centres, with their intermediary position in the international structure, base their power "on the paradox of regional dominance and global dependence; hence the exercise of their power is twice constrained - by resistance within the region and by the global calculations of corporations and major powers." The emergence of regional power centres appears to be a function of the partial withdrawal of colonial powers from the Third World, attempts at regional integration among developing countries, and the development of economic and political forces within their own states. Partial withdrawal of colonial powers is understood in the sense of exercising indirect rather than direct control. Patterns of regional integration in the Third World are seldom egalitarian, characterised as they are by concentration of political power and economic benefits in the hands of the leading country. Compensatory measures in Third World integration schemes have not led to a substantial redistribution of these benefits, resulting in some cases (e.g. the East African Community) in their disintegration. The emergence of regional power centres is directly related to these characteristics of the integration schemes in the Third World.^{2/}

The creation of a regional bloc is usually a conflictive process, sometimes involving clashes between regional centres, particularly where they are located close to each other. Occasionally, a co-operative pattern, based on joint interests and a division of labour, may be established between them. Nevertheless, the following conclusion appears valid: "The potential for conflict among regional powers and for superpower involvement in regional conflict will increase".^{3/}

Internal conditions in regional power centres are characterised by the gradual development of productive forces and by the emergence of an industrial sector which is usually stronger than that of neighbouring countries. The domestic accumulation process is possible at the expense of a regressive distribution of incomes and the consequent marginalisation of masses from consumption but its further development is inhibited by the reduced size of the domestic market. At this point, local capital has either to be wasted on luxury goods or to be invested abroad, normally within the regional bloc.^{4/}

^{1/} See Raimo Väyrynen and Luis Herrera, *Subimperialism: From Dependence to Subordination*; *Instant Research on Peace and Violence* 3, 1975, pp. 165-177 and the literature quoted there.

^{2/} Shaw, *op.cit.*, 1977, pp. 376-382; (the quotation is from p. 376).

^{3/} Pfaltzgraff, *op.cit.*, 1977, p. 7.

^{4/} See Väyrynen and Herrera, *op.cit.*, 1975, pp. 171-172; and Ruy Mauro Marini, *Brazilian Subimperialism*; *Monthly Review* 1, 1972, pp. 14-24.

The internal system of a regional power centre has been characterised also as semi-industrial capitalism, and, in particular, as its special variant, polarised accumulation. This refers to peripheral economies in which industrialisation has advanced through import-substitution and has arrived at the stage where most part of the capital goods are produced locally. Another characteristic of semi-industrial capitalism is the composition of exports; these consist predominantly of primary products and manufactured goods, which flow largely to less industrialised countries of the periphery. Imports are normally composed of manufactured goods and advanced technology which are acquired in part directly from centre countries, or through the local branches of transnational corporations. A few oligopolist firms dominate key sectors of the economy, and the subsidiaries of TNCs participate extensively in production.^{1/}

The existence of regional power centres and regional blocs surrounding them is a recognised reality of the present-day international powers. Members of this category may include the following countries: Brazil, India, Iran, Nigeria and Venezuela. Others might add countries such as Indonesia, Saudi Arabia, Kenya and Zaire, although they are excluded from the present analysis. Although not usually treated as developing countries, South Africa and Israel share many characteristics of the group as well. As may be readily seen from the list, these countries do not constitute any homogenous group and follow rather different foreign policies. They do have, however, one uniting feature, viz. their structurally similar regional and international position.

In the following table a few indicators are provided for the countries selected for a more detailed analysis, comparing them with the corresponding averages for the Third World as a whole:^{2/}

Table 6 (1): Some economic characteristics of regional power centres

	GNP constant \$ billion, in 1975	GNP per capita constant \$, in 1975	Share of manufacturing of GDP in 1974-75, per cent
Brazil	101.1	942	19
India	91.2	149	14
Iran	47.7	1,370	20
Venezuela	27.3	2,130	17
Nigeria	23.1	367	8
Third World (China excluded)	8.9	408	16.3
(South Africa)	32.5	1,300	24

1/ See Philip Ehrensaff, *Polarised Accumulation and the Theory of Dependence. The Implications of South African Semi-Industrial Capitalism*, in Peter C.W. Gutkind and Immanuel Wallerstein (eds.), *The Political Economy of Contemporary Africa*, Beverly Hills, 1977, pp. 67-85.

2/ The table is based on the following sources: *Statistical Yearbook 1977*, United Nations, New York, 1978, and *World Military Expenditures and Arms Transfers, 1966-1975*, ACDA, Washington, D.C. 1977.

It appears that the regional power centres are at least three times larger in economic size than an average developing country. In the case of GNP per capita the situation is more complex; India, in particular, is considerably poorer than an average Third World country, although this is well compensated by her size, an essential ingredient in the emergence of a regional power. Regional power centres are also relatively speaking more industrialised than other countries of the South (the absolute sizes of India's and Nigeria's industrial bases make up for their small share of GDP). Similarly, it is the region concerned that provides the relevant backdrop: although Nigeria's economy is not as strong as those of the other regional power centres, within her own region, her pre-eminence is quite clear.

The following section concentrates on a select number of features common to regional power centres: although the analysis will not be able to capture the rich complexity of international power structures, the six examples given should provide an adequate illustration of the points used in the analysis.

6.2.2 Dependence and the Model of Development

It was mentioned above that the regional power centres possess two central characteristics: dependence on one or more centre nations, and aims at regional, political, military and economic expansion. With rare exceptions these centres have strongly oriented their trade towards the United States and, to a lesser extent, towards the leading countries of Western Europe. Thus a clear-cut trade dependence exists.

This trade dependence is completed by other variables such as the commodity composition of exports, as well as by technological and financial dependence. As to technological dependence it may suffice to point out that all the regional power centres mentioned earlier are strongly dependent on the technology provided by the industrialised countries, often through the network of transnational corporations which also play a major role in trade relations.^{1/} While it is true that regional power centres are moving away from technological dependence towards a higher degree of autonomy, this is a gradual process. The path proceeds from the outright import of technology, through local subcontracting and licensed production, to semi-indigenous production with the help of local subsidiaries of transnational corporations. Only after these phases are experienced, does a relatively high degree of autonomy appear to be possible.

The phases of technological dependence seem to coincide with three distinct phases of development. The first phase is characterised by the export of raw materials and agricultural products as well as by the import of practically all manufactured and semi-

^{1/} In the case of Iran, see, e.g. Perydoon Firozzi, *The United States Economic Interests in Iran*. *International Studies*, 1, 1976, pp. 29-44 and on Brazil, e.g. Marcos Aruda, Herbert de Souza and Carlos Alfonso, *Multinationals and Brazil. The Impact of Multinational Corporations in Contemporary Brazil*, Toronto, 1975.

manufactured goods. This vertical division of labour is normally inherited from the colonial period. The second phase is characterised by the substitution of imports and hence by the gradual development of local manufacturing industry. The import-substitution stage is important for the reason that it marks the establishment, however modest, of the local industrial base and the production of goods for the domestic market. This production is seldom kept in private hands, given the early recognition by transnational corporations that there is a potentially lucrative market which they can penetrate. Licensed production is one of the indirect ways in which transnationals enter the economy of the dependent country, in addition to direct participation.

If the policy of import substitution is by and large successful, the national industrial base is strengthened and production progresses to more technology-intensive industries, again with the aid of transnational corporations. The industrial base of the country, in other words, becomes more comprehensive, and the export of manufactured goods, normally with the help of state incentives, starts to grow rapidly. This phase has been called export-led growth, and Brazil, together with South Korea, have been considered representative and successful examples of this development. A number of social and economic problems tend to accompany this stage. First, the high rates of growth of exports and of the economy in general frequently take place together with the marginalisation of the population majority.^{1/} Secondly, "the strategy of the export-led growth, in spite of all the support given to it by means of a full complement of incentive measures designed to promote exports, especially manufactured products, did not prove effective in Brazil. While it is possible to argue that during this very period the exports did to some extent contribute to the gross national product, an average of 10 per cent during 1968-74, yet the export growth was thanks more to a world-wide boom than to the strategy of export-led growth ... a closer look of the manufacturing sector would show that the expansion of this sector was largely at the behest of the MNCs. While the record of both industrial production and exports was very satisfactory, the achievement was limited largely to industries controlled by the MNCs."^{2/}

The stage of export-led growth, in which manufacturing output and its exportation assume a prominent role, may not constitute in the longer run, the most viable path of development because of the many economic and political hazards involved. It normally coincides, however, with the semi-indigenisation of the production of technology and capital goods, although the role of transnational corporations remains prominent, and may even gain new significance as their activities become more "internalised" and more closely allied with local private and public capital and public authorities. This alliance between foreign and domestic capital and the state machinery in fact forms the backbone for the

^{1/} For one analysis of the various phases of development, see Dieter Senghaas, *Weltwirtschaftsordnung und Entwicklungspolitik. Plädoyer für Dissoziation*. Frankfurt am Main, 1977, esp. pp. 118-152.

^{2/} See R. Narayan and R.L. Chavla, *Limits to Export-Led Growth: The Brazilian Experience during 1964-1974*. *International Studies* 2, 1978, pp. 331-345.

promotion of manufactured exports and, at the same time, for the establishment of a semi-autonomous military industry. None of these phases is uniform in character, varying widely from one country to another. One significant distinguishing factor is the role of the regional centre. In the case of oil exporters, development along the path described above is probably more belated and less "pure" compared with regional centres which base their external relations on non-oil exports.

The countries analysed here belong to some extent to different phases of development. Brazil and South Africa with the most developed technological and industrial infrastructure (although considerably shaped by transnational capital) are the most capable of pursuing a policy of external economic expansion. Iran and Venezuela may eventually reach the same stage, but their economies still constitute a mixture of oil production and import-substituting industrialisation. Nigeria may be placed in the same category, but having started much later, lags far behind both these countries. India's case is to a certain extent atypical, making it difficult to place her economy squarely in any of the phases described. India's economic policy is partly characterised by the substitution of imports, but also by relatively highly developed technology in some industries as well as by the urge to export. On the other hand, the role of transnational corporations is much less modest than in the other countries. In fact, India, relative to the other countries of this group, most closely approximates the idea of genuine self-reliance.

The military dimension might be introduced at this point. Earlier, it was demonstrated that the character of the military establishment and the strength of domestic arms production have largely dictated the level and model of development followed. In a political sense one may say, following Luckham, that military professionalism is manifested in the Third World by two themes. One is military nationalism which aims at creating an effective nation state supported by a strong conventional army. This requires, in turn, the purchase of weapons, thereby integrating the country into an international, military-economic division of labour. The other is the symbiosis of the army and the state which acts to reinforce the existing order in the periphery. This presupposes the intervention of the military into conflicts between capital, whether foreign or local, and labour, usually in favour of the former. The reinforcement of the military establishment, either through arms purchases or domestic arms production, provides the capacity to maintain the existing internal order.^{1/}

6.2.3 External Expansion

So far, various forms and phases of dependence have been analysed by which the emerging regional centres of power are associated with the metropolises of the world. Another crucial aspect of their position is their expansion outwards, primarily in the regional setting. Doctrinal considerations play an important part here.

^{1/} Robin Luckham, *Militarism: Force, Class and International Conflict*, IDS Bulletin 1, 1977, pp. 23 and 28-29.

The control of the Persian Gulf has historically formed a part of Persian nationalist aspirations, but was earlier constrained by the presence of the colonial power.^{1/} After the British withdrawal, Iran started to develop both diplomatic, political ("the policy of federation") and economic relations with the sheikhdoms of the Persian Gulf and increased her military strength in order to ensure her influence in the Gulf area. In the 1960s and the 1970s the Shah extended Iranian interests by claiming and finally taking possession over some islands in the Persian Gulf, and by participating in the military repression of the Dhofari rebellion in Oman.^{2/}

The Persian Gulf is important for Iran because of its ports, acting as her "windows on the high seas". The Gulf is also needed as a transportation route for the bulk of Iranian oil leaving for the world market as well as for her non-oil exports. The most important economic asset in the Gulf area is, however, the offshore oil reserves, the control of which has created new conflicts and reinforced old ones between the states of the area.^{3/} In general, Iran under the Shah was able to expand and stabilise her position in the Persian Gulf after the British departure from the area. Rivalries with Saudi Arabia, Iraq and other Arab countries have been settled either through the Iranian exercise of power or by intricate agreements. Iran has not, however, carried out this policy alone, but has enjoyed extensive military and political support from the West, in particular from the United States but also, during the 1970s, from Western Europe.^{4/} The multiplicity of economic, cultural and military ties that existed between Iran and the United States reflected the importance attached to Iran "as a stabilising and friendly influence in the Middle East".^{5/}

Brazilian foreign policy aims at achievement of the status of a leading intermediary power in the international system and, as part of this target, at the consolidation and extension of her power in South America.^{6/} Brazil already has considerable economic,

^{1/} See Roudollah K. Ramazani, *The Persian Gulf, Iran's Role*; Charlottesville, 1972, pp. 8-27.

^{2/} Oman: The Sultan's Dhofar War. *The Economist*, March 8, 1975, pp. 52-53, and Shahram Chubin and Sepehr Zabih, *The Foreign Relations of Iran. A Developing State in a Zone of Great-Power Conflict*, Berkeley, 1974, pp. 214-234 and 310-312.

^{3/} Ramazani, op.cit., 1972, pp. 5-8 and 69-87 as well as Chubin and Zabih, op.cit., 1974, pp. 272-295.

^{4/} For an overview of the US aid to Iran until the early 1970s, see *New Perspectives on the Persian Gulf*; Hearings Before the Sub-Committee on the Near East and South Asia on the Committee on Foreign Affairs. House of Representatives, Ninety-Third Congress, First Session; Washington, D.C., 1973. On West European interests and support, see Karl Kaiser, *Iran and the Europe of Nine: A Relationship of Growing Inter-Dependence*; *The World Today* 7, 1976, pp. 251-259.

^{5/} See, e.g. the statement by Joseph J. Sisco, Under-Secretary for Political Affairs, in Department of State Bulletin, No. 1881, July 14, 1975, pp. 73-81, as well as the statement by Alfred I. Atherton, Jr., Assistant Secretary for Near Eastern and South Asian Affairs, in Department of State Bulletin, No. 1903, December 15, 1975, pp. 862-864.

^{6/} Ronald N. Schneider, *Brazil. Foreign Policy of a Future World Power*; Boulder, 1976, pp. 31-56 and passim.

political and military influence in a number of Latin American countries to which she is also exporting capital, including Bolivia, Uruguay, Paraguay and Chile. In 1973-74, Brazilian direct investments in Latin America amounted to \$ 400 million, rapidly increasing from a figure of \$ 90 million in 1969. Brazil has also concluded agreements with, for instance, Uruguay and Bolivia on assistance in the implementation of their development plans, and in the exploitation of their mineral resources.^{1/}

Of particular importance in Brazil's foreign policy is the control and exploitation of the River Plate Basin where Brazil is carrying out a number of construction (mainly hydroelectric) projects in several countries. The energy resources provided by this region are seen as crucial to her long-term aims. Brazil's doctrine of regional co-operation is firmly anchored in geopolitical realities and in the consideration of neighbouring countries as critical border areas for legitimate control. Brazil also aims at the conclusion of regional pacts, mainly for economic purposes, to consolidate her influence. An interesting example of this strategy is the Amazon Pact concluded in July 1978 with Bolivia, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela. This treaty calls upon the contracting parties to co-ordinate the development of their respective Amazon territories.^{2/}

Brazil has also started to expand her influence outside the Latin American continent. In particular she has strengthened her economic ties with the countries of Western Africa, following which is her aim of building up economic relations with the countries of the Middle East.^{3/} The political and economic expansion of Brazil has not taken place without resistance. Argentina and Venezuela have been cool towards Brazil's policy, and have in fact competed with her for regional dominance, although recently, moves have been made to develop closer co-operation with Brazil.^{4/}

Venezuela has emerged as an incipient regional power only recently. In fact, the subregional power policy started only with the regime in 1973. This policy was strongly encouraged, or at least facilitated by the new oil wealth accumulated after the price adjustments of that year. The economic and political influence of Venezuela has been extended mainly to the Caribbean region, where economic co-operation projects were launched and loans granted. In 1974, Venezuela also became more active in Central America, where

^{1/} Gustavo V. Dans, Brazil on the Offensive; *NACLA's Latin America and Empire Report* 4, 1975, pp. 5-28.

^{2/} See Robert D. Bond, Venezuela, Brazil and the Amazon Basin; *Orbis* 3, 1978, pp. 635-650. The Amazon Pact is often seen as a Brazilian effort to intensify and expand indirectly the trade with the seven Latin American countries with whom her economic relations have been minimal; see Alexander Smirnov, *The Amazon Pact Project*; *New Times* 4, 1978, p. 27.

^{3/} See, e.g., Brazil Moves into Africa; *Development Forum* 3, 1978, p. 10. The subimperial pattern in this expansion is evidenced by the fact that many of the companies involved, e.g. Saab-Scania and Mercedes Benz do Brazil, are subsidiaries of transnational corporations operating in Brazil.

^{4/} Dans, *op.cit.*, 1975, pp. 20-21, and Bond, *op.cit.*, 1978, pp. 635-650.

economic endeavours assumed the main role, although the Pérez regime was also politically active in issues such as the Panama Canal and Belize. In the Caribbean and Central American subregions, Venezuela's efforts have been welcomed in general, extension of her economic power meeting slight resistance from the only other significant economy of the subregion, Trinidad and Tobago. The state of co-operation with the Andean states is quite different; various difficulties have emerged in Venezuela's relations with Colombia and Ecuador, as well as with Guyana and, in particular, Brazil. Venezuela, although a member of the Andean Pact, has avoided the role of a large-scale financier in the group. There are, however, signs that Venezuela has visualised the Andean Pact as a counterweight of Spanish-speaking countries to Brazil.

This brief analysis suggests that in economic terms Venezuela is not a full-fledged regional power, although there have been definite moves in this direction. At the same time, her dependence on the United States, both as a market for her oil and as a source of technology and manufactured goods, has increased rather than decreased.^{1/} Venezuela's regional policy may receive setbacks as a result of the economic problems she has recently faced; in 1978 she experienced the biggest balance-of-payments deficit in her history; foreign debt increased by 57 per cent compared with the preceding year; oil income dropped; and dependence on imported goods, including food, increased.^{2/}

South Africa's case is special not only in terms of her status as a quasi-industrialised country, but also because of her relative international isolation as a result of her internal apartheid policies. Nevertheless, the country provides a clear illustration of regional power characteristics. Economic expansion became necessary in order to compensate for the weak purchasing power of her own population majority, searching for markets in neighbouring African countries. The maintenance of the system of labour migration from neighbouring countries was beneficial in order to keep production costs in factories and mines at a low level. In the case of Botswana, Lesotho and Swaziland, outward economic expansion took place under the institutional umbrella of the Southern African Customs Union which was established as early as 1910 and revised in 1969.^{3/}

The regional power status of South Africa is also seen in her utilisation as the export springboard of transnational corporations. The best example is probably given by the operations of BMW's manufacturing plant in the vicinity of Pretoria. This subsidiary, which is BMW's only unit outside the Federal Republic of Germany, exports more than one

^{1/} See John D. Martz, *Venezuelan Foreign Policy toward Latin America*; in Rober D. Bond (ed.), *Contemporary Venezuela and its Role in International Affairs*; New York, 1977, pp. 175-187; and Gregory F. Treverton, *Venezuela's New Role in World Affairs*; *The World Today* 8, 1976, pp. 308-316.

^{2/} Joseph A. Mann, Jr., *Venezuela: Economic Star Losing Shine*; *International Herald Tribune*, January 24, 1979.

^{3/} *Ibid.*, pp. 114-161, and Kenneth W. Grundy, *Intermediary Power and Global Dependency: The Case of South Africa*; *International Studies Quarterly* 4, 1976, pp. 553-580.

half of its local production, mainly to Iran with whom contracts were concluded in 1977-78 on the provision of 150-250 luxury cars per month. The availability of local subcontractors and the continued appreciation of the West German mark make South Africa an increasingly attractive source of supply. Another example is the export of tractors by Klöckner-Humboldt-Deutz from South Africa to Latin America.^{1/}

Military means to strengthen South Africa's position have been evident in her relations with Angola and Zambia, Rhodesia and Namibia. However, a number of regional agreements were concluded during 1966-73, after which the garrison, or laager option came to the fore once again.^{2/} Efforts to build links outside the region showed in relations with states such as Iran, Israel, Taiwan, South Korea, Brazil, Argentina, Paraguay and Uruguay. In particular, closer co-operation was developed with the Latin American countries, basically of economic character, but also involving political and military aspects. An example of the latter is intensified co-operation between the navies to control the South Atlantic.^{3/} The sharply-divided nature of the labour force, and the intimate ties with transnational corporations, are features peculiar to South Africa's development as a regional power.^{4/}

The 1960s in the Indian subcontinent were characterised by the conflict between India and Pakistan on the one hand, and between India and China on the other. In the early 1970s, a form of political settlement took place through the division of Pakistan and the gradual normalisation of relations between India and China. Pakistan was weakened to the extent that it could not participate any more as a real rival to India. At the same time, India was able to strengthen her position by securing co-operation from Bangla Desh, with whom a Treaty of Peace, Friendship and Co-operation was signed in March 1972. In addition to political co-operation, India was able for a time to extend her economic influence to Bangla Desh.

The treaty between India and Bangla Desh followed the lines of the Indo-Nepal Treaty of Peace and Friendship of 1950, after which Nepal gradually developed a balance in her relationship with both India and China. India has treaty relations as well with the Himalayan Kingdoms, Bhutan and Sikkim, which are both economically and administratively very closely linked with India.^{5/} In this way, India has been able to develop a small zone of control which is kept together more by a type of dominated interdependence than by coercive measures.

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- ^{1/} See, e.g. Sunday Times, July 23, 1978; and The Star Weekly, September 9, 1978.
- ^{2/} Peter C.J. Vale, South Africa as a Pariah International State; International Affairs Bulletin 3, 1977, pp. 121-141. See also Shaw, op.cit., 1977, pp. 382-392.
- ^{3/} See Daniel Waksman Schinca, El Proyecto de la OTAS; Nueva Politica 5-6, 1977, pp. 331-352; and L. Teplov and I. Pimenov, Imperialist Plans for the South Atlantic; International Affairs 7, 1977, pp. 92-100.
- ^{4/} On the US transnational corporations in South Africa see, e.g. Barbara Rogers, White Wealth and Black Poverty. American Investments in Southern Africa; Westport, Conn., 1976, and Ann and Neva Seidman, US Multinationals in Southern Africa, Dar es Salaam, 1977.
- ^{5/} K.R. Narayanan, New Perspectives in Indian Foreign Policy: India's Growth as a Regional Power; Round Table, No. 248, October 1972, pp. 453-464. For case studies see R.S. Chaunan, India and Sikkim; Foreign Affairs Reports 8, 1975, and Shree Krishan Jha, Nepal's India Policy: Quest for Independence; Foreign Affairs Reports 11, 1976.

In general, India has favoured bilateral relations over multilateral solutions, accounting in part for her reserved attitude towards the Asian Common Market, advocated by Iran. In other respects, India follows an active foreign policy orientation including the development of close relations with Iran and Afghanistan.^{1/} The regional role of India appears to concentrate, however, on her smaller neighbours and one cannot yet plausibly speak of India as a regional power centre in the same sense as Brazil in Latin America. India is, however, increasingly exporting capital and technology to other developing countries, in particular in Asia, which may be taken as an indication that in the longer run India's economic role in the region will probably become increasingly important.

Nigeria has emerged clearly as the political and economic leader of West Africa. This success in extending her influence in the region is due to several factors, among them her financial resources accumulated through exports of petroleum. These amounted to \$ 37.5 billion after 1973 (\$ 5.7 billion in the financial year 1976-77 alone). The military strength of Nigeria has grown conspicuously during and after the Civil War. In analysing the present situation in Nigeria one should not underestimate the unity which was achieved through the Civil War. The war also marked a turn in the foreign policy of Nigeria. The policy turned initially towards regional and eventually to Pan-African and global affairs. The direction of change has been practically the same as in Venezuela after the advent of the Pérez regime.

The new trend in Nigerian foreign policy is exemplified by her active role in the political struggle against apartheid in South Africa, in the provision of financial aid to her neighbours as well as in the efforts to establish the Economic Community of West Africa (ECOWAS). The Community is likely to increase Nigerian influence throughout the region, and allow Nigeria, surrounded by Francophone states, to escape her political and cultural isolation. Furthermore, ECOWAS was considered for good reasons a vast market for Nigeria's growing economy.^{2/}

Plans to establish institutionalised patterns of economic co-operation in West Africa, where the level of intra-West African trade has averaged only some 3 per cent of the total foreign trade by countries of the region, can be traced at least as far back as Kwame Nkrumah. Between 1967 and 1972 very little was achieved in the effort to establish a customs union in West Africa. The lack of progress in this direction led to the setting up of micro-economic unions which were expected to lead to the ultimate goal. In 1972, an economic community was formed by seven French-speaking West-African countries: Ivory Coast, Upper Volta, Mali, Mauritania, Niger, Senegal and Dahomey. In the same year, Nigeria and Togo started to develop the notion of a West African Economic Community (Liberia and Sierra Leone also started to strengthen their bilateral co-operation by establishing the Mano River Union).

^{1/} See Dieter Braun, Changes in South Asian Intra-Regional and External Relationships; The World Today 10, 1978, pp. 390-440.

^{2/} Keith Sampbell, The Economic Community of West African States (ECOWAS); South African Institute of International Affairs. Occasional Paper; Braamfontein, September 1978, pp. 7-8, and Alan Rake, 16 States Working Towards a Common Market; ECOWAS Moves Gradually Towards Economic Unity; International Herald Tribune. A Special Report, July 1978.

By May 1973 nearly all West African countries had agreed to the idea of a West African Economic Community; in May 1975 the Treaty of Lagos, establishing ECOWAS, was signed, and protocols bringing the treaty into force were ratified by November 1976. Briefly stated, the aims of ECOWAS are to establish a customs union between its member states and to bring about common policies in industry and agriculture as well as the harmonisation of economic and monetary policies. The following 16 countries are now members of ECOWAS:^{1/} Benin, Cape Verde, Gambia, Ghana, Guinea, Guinea-Bissau, Ivory Coast, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo, Upper Volta.

The role of Nigeria in West Africa may be analysed in more detail by looking at her relative economic and military status within ECOWAS. The other countries in the region which have been striving for regional preeminence include Ghana, in particular during the Nkrumah period, as well as Senegal and Ivory Coast which have been competing with each other in various contexts since the colonial period. The rivalry between Senegal and Ivory Coast for economic leadership has been reinforced by personal competition between the leading personalities of both countries.^{2/} Thus, Nigeria, Ghana, Senegal and Ivory Coast are the leading countries in West Africa in terms of both their military and economic capacity. This question is explored in the table below:^{3/}

Table 6 (2): The distribution of economic and military power within ECOWAS in 1975, per cent

<u>Country</u>	<u>Gross National Product</u>		<u>Military expenditures</u>	
Nigeria	63.7		82.3	
Ghana	10.9		5.4	
Ivory Coast	8.6	82.6	4.0	91.7
Senegal	5.3		2.2	
Guinea	1.7	89.6	1.5	95.4
Sierra Leone	1.4		0.4	
Liberia	1.3		0.3	
Mali	1.3		1.0	
Niger	1.3		0.3	
Togo	1.3	96.2	0.5	98.1
Upper Volta	1.3		1.0	
Benin	0.9		0.5	
Mauritania	0.8		0.6	
Gambia	0.2		0.0	
Guinea-Bissau	0.0	100.0	0.0	100.0

^{1/} Campbell, op.cit., 1978, pp. 7-10; Europa Yearbook, Vol. II, London, 1978, p. 105; and Folayan Ojo, Economic Integration: The Nigerian Experience; Institute of Social Studies, Occasional Papers, No. 54, The Hague, October 1975, pp. 8-14.

^{2/} For a more detailed analysis of the rivalry between Senegal and Ivory Coast, see, e.g. P-Kiven Tuntong, External Influences and Subimperialism in Francophone West Africa, in Peter Gutkind and Immanuel Wallerstein (eds.), The Political Economy of Contemporary Africa, Beverly Hills, 1977, pp. 212-231.

^{3/} The data originate in World Military Expenditures and Arms Transfers, 1966-1975, ACDA, Washington, D.C., 1977, passim. No information was available on Cape Verde.

It is evident that both economic and military power (the latter even more than the former) are strongly concentrated in a handful of countries which were singled out above for their competitive foreign policy. Economic and military dimensions of power clearly reinforce each other. Nigeria is in a category of her own, possessing roughly two thirds to three fourths of the power base within ECOWAS. Extension of her economic presence to other member countries of the community comes as no surprise.

Although Nigeria has not developed any geopolitical doctrine of expansion, the geographic factor has a certain significance within ECOWAS. One author has divided the area into three zones of which the outer one covers the West African coast roughly from Dakar to Lagos. The harbours and cities of the ECOWAS region are located in this zone which is also responsible for the bulk of its industrial production. The inner zone is only thinly populated and specialises mostly in cattle breeding and in cotton production. The interior of the region consists of such countries as Niger, Upper Volta, Mali and Mauritania. The middle zone combines the characteristics of the two main zones, although it is probably closer to the interior than to the exterior. It could, for example, develop extensive agricultural and cattle production for the exterior.^{1/} The policy of integration within ECOWAS is likely to consolidate rather than transform this system if the precedents of integration schemes in the Third World are any guide, so that economic benefits flow to the exterior at the expense of the hinterland.

ECOWAS probably comes closest to a regional bloc dominated by a regional power centre, as an institutional arrangement through which Nigeria can exert her economic and political influence. In the case of Brazil one may also speak of an institutionalised regional bloc because of the multilateral economic agreements which she has concluded with other Latin American countries. The case of other regional power centres analysed in this paper is somewhat different: Iran, India and Venezuela have not dominated any formal multilateral arrangements which could be called regional blocs, instead exerting their economic and other forms of influence bilaterally and through more informal channels. It may be worth distinguishing between two types of regional power centres: those which promote umbrella multilateral arrangements and those which prefer less visible, bilateral forms of influence.

6.2.4 The Military Dimension

It was pointed out earlier in this section that the military dimension is a central aspect of the position of a regional power centre. International subsystems are based not only on utilitarian and normative ties, but also use coercive means to maintain their structures. This may mean either the open use of the military power or its latent use as a deterrent. All the five regional actors analysed in this section belong to the leading military powers of the Third World. The growth rates of their military budgets have also been more rapid than those of most other developing countries.

^{1/} See Christer, Krokfors, ECOWAS - ett hopp om regionalt samarbete i Afrika? Utevecklingsamarbete 1, 1979, pp. 4-8.

The following analysis briefly examines the military strength of the regional power centres in terms of their military budgets, their domestic capacity to produce arms and their nuclear weapon status.

Table 6 (3): Growth rates of military expenditures of some regional power centres, 1957-1977, per cent at current prices^{1/}

	<u>1957-62</u>	<u>1962-67</u>	<u>1967-72</u>	<u>1972-77</u>
Iran	77.8	182.7	229.4	349.2
India	62.7	119.9	69.9	67.7
Brazil	225.7	1712.2	288.8	297.7
Venezuela	2.6	73.8	45.7	244.2
Nigeria	400.0	62.5	303.5	301.7 (1972-76)
Third World Average	211.9	814.8	256.3	235.3
South Africa	123.0	105.1	37.3	238.2

The information provided in the table suggests that the military expenditures of the regional power centres have grown, on average, more rapidly than in the Third World in general. This has happened in spite of the fact that the absolute level of militarisation reached has been considerably higher in these countries. This trend may be observed only during the last two five-year periods and more strongly only in 1972-77, suggesting, in turn, that the category of regional power centres, including the rapid growth of their military establishments, is a relatively new, emerging, phenomenon in international relations. This observation holds true especially in the cases of Venezuela, Nigeria and Iran.

The military industry and policies of India and Brazil were analysed earlier at some length. Strengthening of the military industry is largely a function of the development of the industrial infrastructure on which military efforts can be based. In the case of Iran, for instance, the index of industrial production (1970 = 100) grew from 30 in 1960 to 142 in 1972, while the corresponding growth in Brazil, for instance, was from 52 to 126 and in Japan from 28 to 110. The GNP of Iran grew, at current prices, from \$ 12.1 billion in 1966, through \$ 21.4 billion in 1970 to \$ 52.1 billion in 1975, apparently accelerating after the early 1970s.^{2/}

Rapid growth in Iran's industrial production may have been, however, a source of revolt against the regime of the Shah. New economic and social forces emerged in the course of industrialisation which were not satisfied with the existing political order and the lack of meaningful channels of influence. Late efforts at modernising the regime only strengthened opposition from other directions. Industrialisation may have acted as a

1/ Data used in the calculations originate in *World Armaments and Disarmament*, SIPRI Yearbook 1978, London, 1978.

2/ *Statistical Yearbook ...*, op.cit., 1977, pp. 157-159; and *World Military Expenditures*, op.cit., 1977, p. 33.

catalyst for the process of change in Iran where the activities of the opposition were also a deliberate reaction against foreign domination and in favour of national emancipation. The role of the Iranian army and its political role may require analysis in this special context.

The development of Iran's military strength may be illustrated by the growing share of the military sector in GDP, from 3.9 per cent of GDP in 1962, 6.8 per cent in 1967, 10.8 per cent in 1972 to 14.6 per cent in 1977. Iranian militarism started to emerge seriously only in the middle of the 1960s. In 1967 the decision was made by the Shah to embark on extensive military projects and free the country from complete dependence on the United States. A massive spurt took place in the 1970s when the purchase of weapons from abroad, from the United States, Great Britain, France, Italy and the Federal Republic of Germany, increased sharply. According to SIPRI, Iran imported in 1970-76 major arms worth US \$ 4.9 billion (constant 1975 prices).^{1/} These arms were used in part to extend Iran's policing of the Gulf. In addition, a considerable number of foreign, mainly US experts and technicians were needed to train Iranians and to run the military establishment.

The need for foreign technicians was an indication of the considerable degree of dependence on foreign technology and expertise in spite of plans for launching a system of domestic arms production and at the establishment of a supporting industrial infrastructure. National, normally government owned arms manufacturers include the large Iranian Military Industries Organisation (IMIO), Iran Aircraft Industries, Imperial Arsenal (specialised in small arms) and Iran Electronic Industries, located at Shiraz.^{2/} There has been very little indigenous design and production so far with most of the technology and know-how obtained from the US transnational corporations (e.g. Northrop, Hughes, Bell, Rockwell International and Litton).

An illustrative example is the Iranian Aircraft Industries (IACI), established in 1969 by Northrop and the Iranian government, with equal shares. According to ambitious plans the company was to employ 3100 workers, 85 per cent Iranian in 1975, producing the first complete aircraft under licensing by 1978. IACI has been more involved, however, in overhaul work, and in some subcontract manufacturing for US aerospace firms; the plans concerning licensed production have not advanced very far.^{3/} In fact, Iran is a clear example of an earlier conclusion that technological dependence on foreign sources cannot be removed easily by launching domestic projects of arms production. Instead, the dependence becomes deeper by assuming qualitatively new forms, due to the sophisticated and complicated nature of modern military technology.

^{1/} Ulrich Albrecht, Dieter Ernst, Peter Lock and Herbert Wulf, *Rüstung und Unterentwicklung*; Reinbek bei Hamburg, 1976, pp. 74-95. See also *World Armaments and Disarmament ...*, op.cit., 1978, p. 232.

^{2/} Lock and Wulf, op.cit., 1977, pp. 74-76; and Stephanie Neuman, *Security, Military Expenditures and Socio-Economic Development: Reflections on Iran*; *Orbis* 3, 1978, pp. 591-592.

^{3/} Albrecht, Ernst, Lock and Wulf, op.cit., 1976, pp. 95-99.

Iran's plans to become a nuclear-weapon power have been the subject of extensive speculation, in spite of Iran's signature of the Non-Proliferation Treaty. In 1974, the Shah himself hinted, in a press interview, that a nuclear-weapons programme was under way, strengthened by information that the country was involved in an oil-for-nuclear technology exchange with South Africa. At the same time there were signs that the massive programme to acquire nuclear reactors did not contain any obvious military intent.^{1/} Towards the end of the last regime, the nuclear option may have been revived, if judged by the willingness to buy highly enriched, weapons-grade uranium^{2/} from the United States, which finally granted an export license.

Nigeria's recent search for regional power status may be seen from her military budget. The following table provides information on the growth of Nigerian military expenditure in comparison with the second-tier countries of ECOWAS as well as with all its remaining members. This analysis covers the years from 1961 to 1976 (constant 1973 prices).^{3/}

Table 6 (4): The growth of military expenditure in ECOWAS, 1961-1976, per cent

	<u>1961-66</u>	<u>1966-71</u>	<u>1971-77</u>
Nigeria	65.7	706.8	153.6
Ghana, Ivory Coast and Senegal	25.8	31.5	6.2
All other ECOWAS countries	92.5	23.0	70.3

The figures make it obvious that Nigeria is not only the strongest military power in the region, but also that her military strength has been growing more rapidly than that of other countries. The exceptionally high growth rate from 1966 to 1971 may be attributed to the civil war, but growth has continued vigorously with the aid of oil incomes. In contrast, increase in the military spending of the second tier, viz. Ghana, Ivory Coast and Senegal, has been much more modest; in fact, the military expenditures of other ECOWAS members, especially those of Mali and Mauritania, have been growing more rapidly.

Nigeria has been a relative latecomer in the acquisition of modern weapons, with several West African countries acquiring modern warships before her, although Nigeria was one of the first to introduce new combat aircraft into the region. Nigeria's own arms industry is, however, very modest: she does not produce any indigenously designed weapons systems, nor is there licensed production based on foreign technology and know-how. In 1970-76 Nigeria imported major arms worth \$ 157 million, of which some 40 per cent came from the United States, and the rest from France, United Kingdom and the Federal Republic of Germany. These imports included modern missiles, helicopters, patrol boats, aircraft

^{1/} See, e.g. George H. Quester, *The Shah and the Bomb*, Policy Sciences 1, 1977, pp. 21-32.

^{2/} Robert Gillette, *Iran Bought US Uranium Before Shah's Overthrow*; *International Herald Tribune*, March 5, 1979.

^{3/} *World Armaments and Disarmament ...*, op.cit., 1978, pp. 156-157.

and tanks.^{1/} Very recently the Nigerian government decided to purchase 12 Alpha Jet fighters, among the most advanced training and attack aircraft in the world.^{2/}

A basic similarity between Venezuela and Nigeria is that they are both regional powers in the making. Both of them started to apply their economic, military and political leverage only after the oil price adjustments of 1973-74. In Nigeria, the internal war "artificially" started the process of militarisation somewhat earlier. Venezuela's military budget increased (in constant prices) by 37.4 per cent from 1961 to 1966, 30.0 per cent from 1966 to 1971 and finally by 27.4 per cent from 1971 to 1976. In 1976-1977, the increase in Venezuelan military expenditures was a high 50.1 per cent in constant prices, amounting in 1977 to \$ 530 million, or approximately 2 per cent of the country's GNP. The absolute figure was the fourth highest in Latin America, after Argentina, Brazil and Chile.

Domestic military production in Venezuela has also been underdeveloped. Recently, however, the production of fast patrol boats was started with Italian aid. In 1975, the Venezuelan government founded the Venezuelan Aeronautical Corporation C.A. (CORPAVENCA), and discussions are underway with Israeli Aircraft Industries on the licensed production of Israeli fighters and military transport planes in Venezuela.^{3/} Strengthening the Venezuelan military establishment has followed the typical path: attempts to achieve greater self-reliance in arms production has coincided with an upsurge in the import of weapons and military technology.

According to one source, Venezuela imported arms worth \$ 38 million in 1966-70, rising to \$ 321 million in 1971-75. SIPRI, however, shows a total for Venezuelan imports of major weapons of \$ 487 million in 1970-76.^{4/} Again, as with Nigeria, Venezuela has had no plans for the acquisition of nuclear weapons, adopting instead a strong negative attitude towards the proliferation of nuclear weapons in Latin America.^{5/}

The case of South Africa is particularly interesting as perhaps the only example of a newly industrialising country that has been able to successfully establish an autonomous capacity for arms manufacture in a wide range of items. Fear of an arms embargo (made mandatory by the Security Council in November 1977) was the major impetus, combined with the potential threat from neighbouring countries. The South African case also provides a clear illustration of the various phases through which the domestic military industry is likely to pass. South Africa started with the import of weapons, and moved gradually during the 1960s to the licensed production of, for example, French and Italian/American military aircraft. Licensed production was combined with an intense effort to indigenise military technology and to develop local industrial infrastructure to support this process.

^{1/} World Armaments and Disarmament ..., op.cit., 1978, pp. 243-252 and 272.

^{2/} Nigerian Air Force Orders 12 Alpha Jets; Aviation Week and Space Technology, February 5, 1979, p. 18.

^{3/} Lock and Wulf, op.cit., 1977, p. 54.

^{4/} World Armaments and Disarmament ..., op.cit., 1978, p. 232; and World Military Expenditures ..., op.cit., 1977, p. 75.

^{5/} See, e.g., Venezuela: Taking a Stand on the Nuclear Family, Latin America Political Report, April 1, 1977, pp. 98-99.

This policy was implemented through the establishment of a number of state bodies, such as the Armaments Board and the Armaments Development Production Corporation, to sponsor and co-ordinate military production as well as military R + D. On the production side, the establishment of the Atlas Aircraft Corporation in the early 1960s with French assistance was perhaps the most notable decision. The transnational corporations played a prominent role in this early stage of the growth of the domestic military industry; African Explosives and Chemical Industries (AECI), jointly controlled by the British Imperial Chemical Industries and Anglo-American Corp., is a well-known example.

The willingness of local TNC subsidiaries (not covered by the 1977 embargo) to participate in the country's military efforts has helped South Africa considerably in diminishing her dependence on foreign suppliers of military technology.^{1/} Dependence continues, nevertheless, in areas such as electronics and the computer industry. South Africa has also advanced rapidly in the development of nuclear technology, with technical assistance from US, French and West German sources. These same sources have also sold enriched uranium, enrichment technology and know-how as well as nuclear reactors.^{2/}

As to the nuclear-weapon status of the remaining countries, India exploded a "peaceful" nuclear device in May 1974. While the Indian government strongly underlines the peaceful nature of her progress in nuclear technology, the borderline between civilian and military nuclear technology is at best vague and depends more on political motives than on any technical criteria. Brazil concluded an agreement with the West German government in 1975 on the purchase of a full nuclear fuel system, in spite of opposition from other sources who have expressed concerns that the availability of uranium-enrichment and fuel-reprocessing plants would enable the Brazilian government to eventually divert such materials for nuclear-weapons purposes.^{3/} At present, these fears have not surfaced very far.^{4/}

In general, the nuclear-weapons option is related to the position of regional centres, but is not crucial to their status. Overall military power, however, is almost an inseparable part of the aspiration to gain regional influence and preeminence, at least in the light of the cases examined here.

^{1/} For a detailed analysis of the South African military industry, see Raimo Väyrynen, *The Role of Transnational Corporations in the Military Sector of South Africa*; UN Centre on Transnational Corporations, New York, December 1978, and the literature quoted there.

^{2/} See Zdevek Cervenka and Barbara Rogers, *The Nuclear Axis, Secret Collaboration between West Germany and South Africa*; London, 1978, and Raimo Väyrynen, *South Africa - A Coming Nuclear-Weapon Power? Instant Research on Peace and Violence* 1, 1977, pp. 33-47.

^{3/} See Norman Gall, *Atoms for Brazil, Dangers for All*, *Foreign Policy*, No. 23, 1976, pp. 155-201.

^{4/} See, e.g., Milton Benjamin, *Brazil's Nuclear Program is Far Behind Schedule*, *International Herald Tribune*, October 19, 1978.

CHAPTER 7: AN EVALUATION OF THE COSTS AND BENEFITS

There are basically two approaches to the study of the relationship between military expenditures and the development of the economy, including its industrialisation. The first approach sees a possible complementarity between the two, in stating that an increase in military spending; and in the allocation of resources for military purposes (in particular in the establishment of a domestic military industry), promotes economic growth. Defence production is conceived as a "high-skill" sector which encourages the technological development of the country through the spill-over mechanism.^{1/} Military production is thus conceived as a central strategy in the upgrading of the economic and technological capacity of the country. The improvement of its economic position, in turn, contributes to providing better opportunities to compete in the export markets for both civilian and military products.

This "consensual" approach neglects, however, a number of issues. It does not usually make any distinction between the quantitative and qualitative aspects of economic development. External dependence and its consequences are also often forgotten. Economic development is conceived in a fairly unidimensional manner as the quantitative growth of the economy and industrial production. The application of this yardstick to the situation of developing countries can lead, however, to misleading results and generalisations.^{2/}

The military factor cannot be isolated from the general social and economic dynamics of countries. Military establishments may have different roles in different types of economies, but they are intermingled with civilian production and largely follow the same general patterns. The allocation effects - the diversion of resources from civilian to military purposes - exist in all economies, although these opportunity costs are naturally higher in relatively more militarised countries. The extent of this diversion may correlate positively with the quantitative growth of the economy, but this is normally the case only in the circumstances of strong external dependence.

The combination of fast growth and militarisation usually leads to society developing in a very unbalanced manner, i.e. its structural heterogeneity is great. The growth is concentrated in those sectors in which there is an abundance of advanced technology, human skills and capital, and which are integrated with the international or regional centers of power. The domestic production of military equipment belongs as a rule to this part of the industrial system, while the military establishment equipped by the arms so

^{1/} As an additional example of this literature, see Miron Mushka Jr., *Defence and Structural Transformation of Industry in Israel*. Co-existence 2, 1978, pp. 207-18.

^{2/} For a criticism of this approach see Aghiri Emmanuel, *Myths of Development versus Myths of Underdevelopment*. *New Left Review* No. 85 (1975), pp. 61-82. Emmanuel underlines the need to distinguish between industrial, half-industrial and pre-capitalist craft production (pp. 67-68).

produced acts to protect the continuity of this industrial pattern. The emergence of advanced industrial and military enclaves tends to increase the gap between them and the "traditional" sectors, and to lead to the relative and (in some cases) even absolute impoverishment of the population majority. Technology-intensive and externally-oriented segments of the national economy constitute bridgeheads which prosper at the expense of the rural areas and the urban poor. These bridgeheads are also channels through which trans-national corporations enlarge their control over the economy.

If the militarisation of a country and its economic and social technological corollaries are related to overall social and economic development, the result is frequently negative. The strategy of establishing military industry as a pioneering branch of the economy never guarantees the balanced and self-reliant development of the country, but favours instead those social groups and organisations which are already privileged, by concentrating power and skills in the hands of the few. The search for self-reliant development does not necessarily require the abolition of the military establishment: its transformation in a more appropriate direction, in conformity with the existing economic and social structure, may be sufficient. This might also help in avoiding the expansionist drive frequently associated with an aggressive growth strategy, both in the civilian and military sectors.

The expansionist strategy is most evident in the policy of the regional power centers. These are also among the most militarised countries of the Third World, although their military efforts cannot be compared with those of the great powers. A change in military strategy with respect to the production and imports of arms and military technology, is likely to have positive repercussions in the general area of foreign trade and other related transactions. The reduction of arms imports would release financial resources for the purchase of more useful commodities, while the reorientation of domestic defence production would reduce the need to import expensive licensing rights, technology and intermediary inputs. By moving in this direction, the achievement of a higher degree of economic and hence political self-reliance would become more probable. Military spending can never be a source of genuine development and well-being, and in fact seldom provides a country with sufficient security. The resolution of security dilemmas must take place through the settlement of political relations between nations.

CHAPTER 8: GUIDELINES FOR THE REORIENTATION OF THE ARMAMENTS INDUSTRY8.1 Reorganisation of the Industry

It has been argued above that the main characteristics of the present world military order are its hierarchic structure and consequent asymmetric dependence patterns. The world military order can be in fact divided into three or possibly four layers which are both analytically and empirically separate from each other. At the highest level there are the military great powers which largely dictate the dynamics of armaments production in the world, including that of the second layer, the smaller industrialised countries which seldom have a comprehensive and viable defence industry of their own. The third layer then consists of developing countries which can be further divided, if so desired, into two groups; those which have embarked upon the domestic production of arms and those which rely on exports.^{1/}

In this vertical division of labour, arms and military technology tend to flow downwards from the top of the hierarchy and thus make the military organisations and armaments industries in various countries uniform both in organisational and technological terms. It is reasonable to state that in global terms, the civilian and military industries form their own vertical sectors which are less integrated with each other through a spill-over process than as a result of the overall industrial dynamics of the leading industrialised countries. This appears to be a reason for the gap between the civilian and military industries being bigger in developing than in industrialised countries.

In a historical perspective, different stages of the industrial product cycles have produced their characteristic weapons systems.^{2/} Thus the rise of the steel industry was a precondition for the extensive naval procurement before the World War I. According to some predictions the 1980s will see the development of a massive telecommunications industry, the rise of which could facilitate the resolution of the growing conflict between protectionist and free-trade industries in major capitalist economies. The rise of the telecommunications industry would also lead to the further development of a new generation of weapons such as precision-guided munitions (PGMs) and automated battlefields as well as many other systems based primarily on electronics and other components of the telecommunications industry.^{3/} If the earlier patterns of the arms race are combined with these emerging tendencies, one comes to the conclusion that the 1980s will see the production of weapons systems typical

^{1/} The existence of a number distinct layers in the world military order is empirically shown by Randall Forsberg, *Resources Devoted to Military Research and Development*, SIPRI, Uppsala 1972.

^{2/} See Mary Kaldor, *The Role of Arms in Capitalist Economies: The Process of Overdevelopment and Underdevelopment*, in David Carlton + Carlo Schaerf (eds.), *Arms Control and Technological Innovation*, London.

^{3/} See James Kurth, *The Political Consequences of the Product Cycle: Industrial History and Political Outcomes*. *International Organisation* 1, 1979, pp. 32-34. The relevant weapons Technologies: *Debate and Directions*. Adelphi Papers No. 126, London 1976, pp. 75-97.

to the telecommunications era also in those developing countries which have relatively advanced domestic arms industries. This prospect would exacerbate the problems which the armaments industry is creating today.

The outcome, most probably, would be that, instead of achieving a high degree of autonomy in their defence industries, developing countries would become even more dependent on the new military technologies of industrialised countries. This would further widen the gap between the civilian and military industries in the Third World. To prevent these developments from taking place, strategies and guidelines must be proposed for the re-orientation of the armaments industries. In industrialised countries the most important single task is to slow down the military research and development which is the major factor behind the technological arms race and its spread to practically all parts of the world.^{1/} This measure would also decrease defence budgets in the longer run, and hence release resources from military to civilian purposes. A part of these resources should be transferred to developing countries, especially to the least developed ones, to assist them, for instance, in their industrialisation programmes.

Hence the process of disarmament in industrialised countries would produce positive results in developing nations in two ways. First, they would receive more resources through various co-operative channels and, secondly, the global dissemination of military technology would slow down. It is not, however, sufficient to consider only the measures which should be taken in the center; the needed transformation of industrial structures in the periphery should also form part of the agenda. It is politically very difficult to create any multilateral intergovernmental arrangements which would govern the transfer of military technology to the Third World. In the civilian sector, similar arrangements for the transfer of better and more appropriate technology have long been planned, but implemented only to a limited extent. In the military sector this approach to controlling the transfer of harmful technologies is hardly conceivable. Consequently, the reorientation of the armaments industry must take place separately in the center and in the periphery, although these measures in reality interact with each other.

In considering the reasons for which it is profitable to induce a process of transformation in the armaments industry, one should pay attention to at least two factors. The import of weapons and military technology reduces the capacity to import civilian technology. This is shown by the fact that in the most militarised countries of the Third World the share of the arms imports in total imports is very high, indicating that the opportunity costs are also high. In addition to the small spill-over effects, the import of arms and military technology for the purposes of the local armaments industry absorbs resources which could have been used otherwise for the broadening and diversification of the production basis of the society. Resource absorption is also obvious in the case of skilled manpower; the

^{1/} On the control of military R + D see, e.g. Harvey Brooks, *The Military Innovation System and the Qualitative Arms Race*. *Daedalus* 3, 1975, pp. 75-97.

repair and maintenance of weapons systems require technicians and other skilled or semi-skilled technical personnel who are desperately needed in the civilian industries in order to implement industrialisation programmes. At present, the growth of military production often constraints these emerging civilian industries through this negative allocation effect.^{1/}

A pre-condition for the transformation of the armaments industry in developing countries is a change in military strategy and military doctrines, as stated in an earlier section. This would be reflected in turn in the structure and composition of the armaments industry. Instead of capital-, research- and electronics-intensive weapons systems less sophisticated, more rugged multi-purpose weapons would be produced, provided that some armaments industry exists in the country. As the thesis of the spearhead function of military technology (its so-called role in enhancing the quality and variety of civilian technology) has proved untenable, this type of reorientation of the armaments industry is not likely to reduce the overall technological capacity of the country. On the contrary, in the alternative production pattern the spill-over process between the civilian and military sectors might be more intense than is the case at present.

The development of the alternative military technology would, and should, be related to the reduction of dependence on external suppliers, and would hence point in the direction of increasing self-reliance. In the course of this development the debt burden created by the purchase of arms and military technology could be reduced, and the opportunities for external political or economic pressure to be applied reduced. The growing debt burden, both in general as well as in connection with arms imports, is a major means of integrating developing countries with the capitalist centers of the world. In the national setting, local raw materials could be utilised more as the country concerned decreased various tie-ins involved in technology contracts. In other words, so-called backward linkages could be created which would integrate the armaments industry more closely with the rest of the domestic economy.

For the time being, the emerging military industries in the Third World negate efforts towards more self-reliant development. By reorienting the armaments industry, at least some steps in the right direction would be taken. This strategy would be opposed presumably by a multitude of actors; among them the arms manufacturers, often transnational corporations, for which developing countries represent increasingly lucrative marketing opportunities. One way of countering the pressures - manifested, for example, in aggressive sales and advertisement campaigns - is to pay more attention to their role in the transfer of military technology in various international codes of conduct, in particular those dealing with the transfer of technology and with the overall activities of transnational corporations. So far the transfer of military technology has been completely neglected in these draft codes.

^{1/} Peter Lock + Herbert Wulf, Rüstung und Unterentwicklung. Aus Politik und Zeitgeschichte B 18/79, 5 May 1979, pp. 22-23 and 25.

Comprehensive international reforms would also improve the opportunities for a more self-reliant strategy of industrialisation, including that of the armaments industry. The relaxation of tension between nations would, for example, reduce the justification for continued militarisation and arms sales. The implementation of basic principles of the New International Economic Order would, in turn, make the international economy more equitable and hence reduce hierarchy and a division of labour which have favoured the present evolution of armaments industries in developing countries.

8.2 The Role of Industrialisation in Disarmament Proposals

The great majority of disarmament proposals advanced after the World War II have concerned nuclear weapons and other weapons of mass destruction. It is self-evident that these proposals have had relevance for various industries in major military powers. This is the case, for example, in the chemical industry where the production of chemical agents for military purpose has been fairly closely related to production for civilian purposes. It is apparent that in the chemical industry the spill-over process between the civilian and military sectors has been more extensive than in the production of weapons systems. The nuclear industry is so much of a special case that it will not be discussed here. It may suffice to say that the civilian and military aspects are closely related in this field, and their separation is possible only through special safeguard arrangements.

The analysis of the relationship between disarmament policy and industrialisation programmes is most meaningful in relation to limiting conventional weapons and forces which are said to absorb about 80 per cent of global military expenditures. As a consequence, various initiatives to reduce the stockpiles of conventional weapons would directly affect the industrial capacity and the economic development of the country concerned. Scores of proposals to regulate and limit armed forces and armaments have been made so far.^{1/} One feature of these initiatives is, however, that they are very unspecific, and do not examine all the implications of possible arms cuts.

The situation is fortunately better in the UN studies (prepared since 1962) dealing with social and economic consequences of the arms race and of disarmament, although these too have led so far to very few concrete ideas and proposals. During the 1970s increasing attention has been paid to the economic aspects of military developments as well as to the interrelationship between disarmament and development. This is partly due to the conjunctural coincidence between the Disarmament and the Second Development Decades. The involvement of developing countries, both in disarmament policy and in development issues, has contributed in the same direction.

^{1/} See the United Nations and Disarmament, 1945-1970. United Nations, New York 1971, pp. 25-125 passim.

In 1972 a UN Group of Experts published a report entitled Disarmament and Development in which the redeployment or reconversion of resources from military to civilian uses was investigated at some length. The experts felt that most of the resources - for example, manpower, food, clothing, fuel and products of the metal and engineering industries - could be converted with relative ease to alternative uses, while other resources such as nuclear weapons plants as well as military aircraft and missile factories could pose more formidable problems. Advance planning by governmental authorities would, however, considerably help in the process of redeployment. It was also considered important that R + D manpower and financial resources should be constructively used in the search for alternative products and production processes.^{1/}

The most thorough analysis of the development aspects of the arms race and of disarmament so far has been carried out by a UN Group of Governmental Experts, appointed by the Secretary-General in 1975. Their report, entitled Economic and Social Consequences of the Arms Race and of Military Expenditures, analysed, inter alia, the role of the arms race in the consumption of resources, its relationship with economic and social development as well as the international implications of the arms race.^{2/} The report deals extensively with the economic role of the arms race, touching also on its impact on industrial development:

How the actual economic performance of individual countries, public and private consumption on the one hand, and investment and growth on the other is affected by their military efforts depends on a number of factors: the level of economic development, the nature of the economic and social system, the extent and effectiveness of government planning, the volume of military expenditures, political priorities and in particular the extent to which the resources used for military purposes would otherwise have been devoted to consumption, private or public, or to investment, and many others... As regards economic development and growth in particular, the maintenance and arming of large standing military forces absorbs a volume of resources substantial enough to affect all the basic parameters involved: the volume and structure of investment, the size and composition of work force and the rate of technological change. The volume of investment which shapes the size and quality of the stock of capital is one of the basic factors determining the rate of growth. To what extent savings on military budgets would be transferred to investment depends, of course, on the economic framework, on political decisions and on the ways in which governments control the economy. Governments have means at their disposal ... to redirect resources and to channel released resources towards investment. Moreover, military budgets are significantly large in comparison with current levels of investment. Some 20 per cent of the total world output is devoted to fixed capital formation, world military expenditures

^{1/} See Disarmament and Development. United Nations publication, sales no. E.72.IX.16. New York 1972.

^{2/} Economic and Social Consequences of the Arms Race and of Military Expenditures. United Nations publication, sales no. E.78.IX.1. New York 1978. This report is in fact an updated, although substantially much improved and lengthened version of the UN document with the same title which came out in 1971.

being equivalent to 25 to 30 per cent of this. In most countries, therefore, there is scope for significant rises in investment if military budgets are reduced. Even crude calculations indicate that the potential effects of this on growth could be substantial.^{1/}

In 1978 the United Nations General Assembly commissioned, at the instigation of the Nordic countries, the most extensive study on the relationship between disarmament and development undertaken to date. The project, which is divided into three major parts, is implemented by a group of governmental experts who have requested about twenty research institutions or individual scholars to prepare reports on various economic and social aspects of the arms race/disarmament complex. The information made available on this project up to the present indicates that this UN study will constitute a major contribution to the debate on the impact of the arms race, and on the impact of disarmament on economic development in general, and industrialisation in particular.

The objection used earlier was that the economic aspects of arms control and disarmament proposals have been almost entirely neglected in official disarmament policies. A partial exception to this rule is the proposal that a certain proportion of the resources released through reductions in military budgets should be devoted to providing assistance to developing countries. This idea was officially voiced for the first time by the Soviet Union in 1973 in a proposal to the UN General Assembly. According to this proposal, which was subsequently approved by the great majority of member states, the permanent members of the UN Security Council should cut down their military expenditures by 10 per cent, and the savings should be transferred for the social and economic development of the Third World. This idea was later revived in the UN context, but has not resulted in any concrete measures. Some countries have insisted that the implementation of the Soviet proposal presupposes a consensus on the concept of a military budget which can be, in turn, only reached with the introduction of a system of standardised military budgets. To clarify this point a number of detailed technical studies have been carried out by the United Nations, but they have not led so far to any concrete political results.^{2/}

To improve the present situation more attention should be paid to the economic and industrial implications of the development and control of military technology. In the national context the practice of providing an industrial impact analysis of any new major weapons system should be introduced, hence, meeting its economic implications clear from the very beginning. At the international level this sort of arrangement is now likely to be feasible. Instead, one might imagine that every arms-control and disarmament treaty, whether bilateral or multilateral, should be accompanied by an evaluation of its economic and industrial implications, and, at a later stage, an indication of how the resources so released could be alternatively used. Such alternative uses are even more of a national question, for ultimate resolution of that level.

1/ Ibid., pp. 42-43.

2/ See United Nations and Disarmament... op. cit. 1976, pp. 210-217.

8.3 Alternative Strategies for the Future

It is, however, erroneous to imagine that alternative uses of industrial production capacity could be developed through only political means. In fact it is imperative to devise national as well as transnational strategies by which the industrial structures may be transformed. This is essentially a technical process which can be started, however, only after the necessary political and administrative decisions are made. An absolute precondition for any major transformation of the armaments industry is the political decision to allocate fewer resources to the military sector. This presupposes, in turn, at least a modicum of agreement between the main military powers that this decision be followed multilaterally since, unilateral reductions of military potential may be helpful in some respects, but do not carry very far.

National measures of reconversion, together with the corresponding cuts in military spending are thus essential to efforts to limit and transform the armaments industry. This does not mean, however, that nothing can be achieved in the absence of these measures. In fact by applying various gradual measures, the armaments industry can be restructured to a considerable extent. At the transnational level one of the major aims should be to switch the focus from projects of joint military production to civilian undertakings. In the present circumstances, especially in Western Europe, civilian research projects are dwarfed in comparison with transnational collaboration on military projects. To transform this situation transnational collaboration in civilian research, preferably across the traditional bloc boundaries, should be considerably increased and institutionalised.

A logical supplement to this idea would be the reconsideration of the present strategy and composition of technology transfer. The armaments industry is rapidly internationalising and focusing on military technology instead of simple weapons systems. By allocating more resources to national and transnational projects on civilian research, the foundation would be created at the same time for the transfer of more and better civilian technology to the Third World. The "better" civilian technology means here the kind of knowledge and equipment which is development-oriented, in contrast to growth-oriented technology, and which can be used to satisfy the needs of the people and, as a precondition for this, to restructure the production system of the recipient. An aim in this alternative strategy would be to decrease technological dependence (the most penetrating type of dependence) of the recipient on the international market. In concrete terms this would include the development of alternative channels for the transfer of technology, at the expense of transnational corporations which now largely control technologies transferred to the Third World.

In other words, two essential changes are needed; the switch from military to civilian research, development and production as well as the switch from the channels of transfer dominated by private interests to those controlled by public authorities. Both of these changes have to be implemented simultaneously to really introduce new elements into the present situation. In particular the switch from channels controlled by TNCs to those controlled by public authorities is not by itself sufficient, as it does not necessarily

guarantee any improvement. This is illustrated by the fact that a considerable part of military technology transferred to developing countries is already controlled, in one way or another, by public authorities. In this perspective the reconversion of resources from the military to the civilian uses appears to be a more crucial measure.

Delinking from the gradually emerging international military-industrial division of labour increases the potential for restructuring national defence systems and their industrial base. It has been argued earlier in this paper that for economic reasons it would be better to concentrate domestic military industry on the production of those weapons systems that would use more local skills, technologies and resources, and would hence avoid adverse financial and technological effects which are caused by excessive integration with the international market in military hardware. It has also been argued that restructuring of the national defence industry should be implemented in conjunction with, or as a part of, the transformation of military doctrine. It may not be an exaggeration to say that the attainment of the goal of self-reliance is impossible in countries producing major weapons systems unless their resources are geared to a new type of military industry. The dependence on foreign military technology perpetuates and reproduces other forms of economic, technological, and in the last instance, political dependence.

The restructuring of the military industry in developing countries is by no means an easy task. It presupposes considerable skills and imagination. In fact a task of this magnitude should be carried out by transnational collaboration, but the present realities of international relations hardly allow this sort of co-operation. Some individual countries may, however, take steps towards this direction by establishing bilateral or multilateral regional arrangements which would focus on collective defence efforts, including the production of the necessary weapons systems. The only example of this sort of policy so far has been the collaboration between a number of Arab countries. This example does not provide any ideal mode, however, this collaboration has been associated almost exclusively with transnational arms manufacturers instead of with efforts at finding out alternative solutions. While alternatives clearly exist, they remain to be formulated.

A problem in alternative defence planning is the fact that the measurement of the economic and industrial impact of alternative models of military production is very difficult. A number of possible approaches have been developed in relation to existing forms of military production. These approaches include, for instance, various parametric studies and input-output analysis^{1/}, which can be used to determine the overall impact of

^{1/} For an analysis of various approaches see Ulrich Albrecht, *Researching Conversion: A Review of the State of the Art*, in Peter Wallensteen (ed.), *Experiences in Disarmament. On Conversion of Military Industry and Closing of Military Bases*. Uppsala University, Department of Peace and Conflict Research, Report No. 19, 1978, pp. 11-43.

on-going military production.^{1/} The measurement of the economic effects of alternative production arrangements is as difficult as the determination of the impact of any other hypothetical system. This being the case, cost-benefit analysis, relying on comparisons between different alternatives, is particularly difficult. It is not, however, impossible since present knowledge enables a rough simulation of the structure and character of alternative defence systems and the consequent evaluation of their likely economic impact.

It has been stressed above that transnational collaboration in the development and application of alternative military technology is for many reasons difficult and even inconceivable. International institutions, preferably those affiliated with the UN system, should be, however, capable, both in political and technological terms, to assist those countries requesting assistance in evaluating the differences in the impact of alternative military technologies and their production. The difficulties are no greater than those facing the efforts of the UN Centre on Transnational Corporations to help developing countries to strengthen their bargaining power vis-à-vis transnational corporations. This assistance goes as far as assisting the governments concerned in drafting agreements with TNCs.

It is true that the military sector has been of special concern to governments, and the involvement of international institutions has been considered an infringement of national sovereignty. International gaps in military technology, and the dependence on foreign economic forces, are becoming, however, so conspicuous that this type of traditional concern is gradually weakening. In this process of change new ideas and alternative solutions are needed.

^{1/} It has been shown, for instance that in the United States the most important direct suppliers, other than personnel, to \$ 1 billion of typical military budget outlays include: aircraft, aircraft engines, and parts (\$ 132 million), radio and TV apparatus (\$ 82 million), ordnance (\$79 million), construction and construction repairs (\$ 52 million), business and professional services (\$ 32 million), transportation (\$ 23 million), industrial chemicals (\$ 17 million) and petroleum refining (\$ 13 million); see Controlling the Conventional Arms Race. United Nations Association of the United States. New York 1976, pp. 71-72.