OCCASION

This publication has been made available to the public on the occasion of the 50th anniversary of the United Nations Industrial Development Organisation.

DISCLAIMER

FAIR USE POLICY

CONTACT

Please contact publications@unido.org for further information concerning UNIDO publications.

For more information about UNIDO, please visit us at www.unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna International Centre, P.O. Box 300, 1400 Vienna, Austria
Tel: (+43-1) 26026-0 · www.unido.org · unido@unido.org

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

09162-
09167

THE SELECTION PROCESS IN BRAZIL, INDIA, MEXICO, REPUBLIC OF KOREA AND TURKEY

UNITED NATIONS

INDUSTRIAL PRIORITIES IN DEVELOPING COUNTRIES

UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION
Vienna

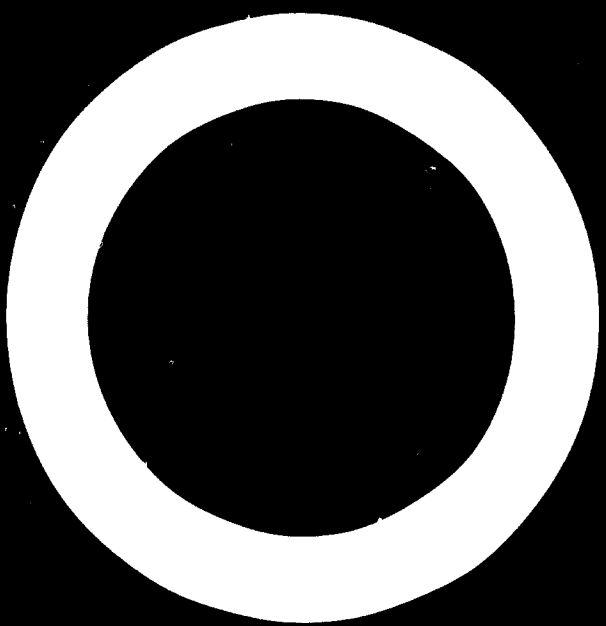
INDUSTRIAL PRIORITIES IN DEVELOPING COUNTRIES:

THE SELECTION PROCESS IN BRAZIL, INDIA, MEXICO, REPUBLIC OF KOREA AND TURKEY

UNITED NATIONS
New York, 1979

ID/217

UNITED NATIONS PUBLICATION
Sales No.: E.78.II.B.12
Price: $US 7.00 (or equivalent in other currencies)



EXPLANATORY NOTES

References to dollars ($) are to United Stetes dollers.

Use of e hyphen between dates (e.g., 1960-1965) indicates the full period involved, including the beginning and end years.

A full stop (.) is used to indicate decimals.

A comme (,) is used to distinguish thousands and millions.

The term "billion" signifies a thousand million.

In tebles, three dots (. . .) indicate that data are not available or are not separataly reported.

Totals mey not add precisely because of rounding.

Besides the common ebbreviations, symbols and terms, tha following hava been used in this report:

General

ASI	Asian Statistical Institute
DRC	domestic resource cost of foreign exchange
EEC	European Economic Community
ECLA	Economic Commission for Latin America
GDP	gross domestic product
GNP	gross national product
ISIC	Intarnational Standard Industrial Classification of all Economic Activities
ERP	affective rete of protection
MVA	manufacturing value-added
n.e.c.	not elsewhere classified
NSP	net social profitability
OECD	Organisetion for Economic Co-operation and Development
SITC	Standard Intarnetional Trade Classification
USAID	United States Agency for International Development
GATT	Ganeral Agreement on Teriffs and Trada

Country organizations

Brazil

BNDE	Banco Nacional do Desenvolvimento Economico
CACEX	Cartario do Comercio Exterior
CDI	Conselho do Desenvolvimento Industrial
SUDENE	Superintendencia do Desenvolvimanto do Nordeste

India

DGTD	Director General of Technical Development
PAD	Project Appraisal Division
PIB	Public Investment Boerd

Mexico

CANACINTRA	National Chamber of the Manufacturing Industry
CEDIS	tax refund certificates
CONCAMIN	Federation of Chambers of Industry
FOGAIN	Guarantee and Development Fund for Medium-Scale and Small-Scale Industry
FOMEX	Fund for the Promotion of Exports of Manufactured Goods
FOMIN	National Industrial Development Fund
FONEP	National Fund for Pre-investment Studies
NAFINSA	Nacional Financiera SA

Turkey

AP	Adalet Partesi (Justice Party)
CHP	Cumhuriyet Halk Partesi (Republican People's Party)
DPT	Devlet Planlama Teşkilati (State Planning Organization)
DYB	Devlet Yatirim Bankasi (State Investment Bank)
KIT	Kamu Iktisadi Tesekkulleri (State Economic Enterprise)
SKYB	Sinai Kredi ve Yatirim Bankasi (Industrial Credit and Investment Bank)
TSKB	Türkiye Sinai Kalkinma Bankasi (Turkish Industrial Development Bank)

Preface

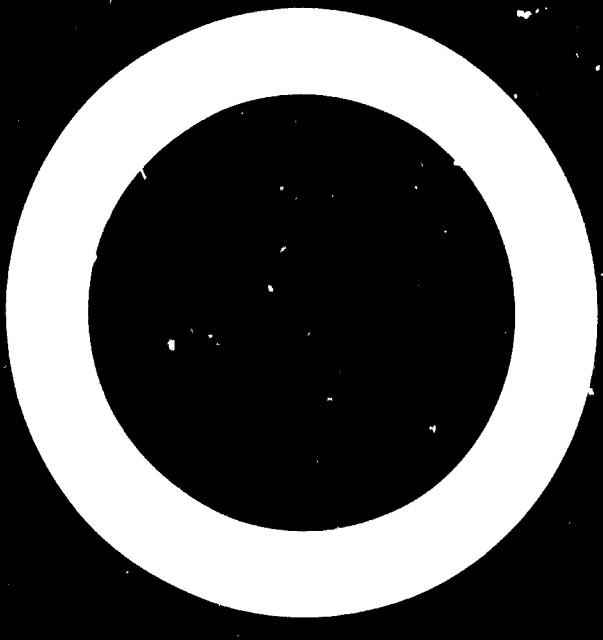
The Second General Conference of the United Nations Industrial Development Organization (UNIDO), held at Lima in 1975, established a 25 per cent target share for the developing countries in world manufacturing value added (MVA) to be achieved by the year 2000 (about a threefold increase from the share in 1975). To attain this target and other national industrial goals, a large increase in capital and other inputs to industry will be required. How to allocate these resources within the industrial sector, that is, how to select industrial priorities, is an important question the developing countries will need to consider carefully if they are to achieve their national industrial goals without wasting resources.

The study examines and assesses the process of selecting industrial priorities in practice, rather than in theory, in the hope that improved empirical knowledge of the selection process will aid actual decision makers and lead to more meaningful theoretical analysis. Considerable emphasis is placed on the institutional background of decision makers, their aims and the nature of constraints that influence decisions and choice of policy instruments. Unlike most studies on development, it is the process itself rather than the outcome of the process of selecting industrial priorities that is the main concern here.

As a guide to future decision making, the study focuses on how in recent years (up to around 1975) five major developing countries—Brazil, India, Mexico, Republic of Korea and Turkey—have selected industrial priorities.

Besides having a combined population of 850 million (1975) and accounting for half of the manufacturing value added of the developing countries (as of 1975), the five countries examined here, all of which have fairly advanced industrial sectors, encompass a wide spectrum of industrial development experience, the analysis of which should be of general interest to economists, administrators and others concerned with the industrialization of the developing countries.

In his essay on Brazil, Joel Bergsman (World Bank) shows a system effectively operated by and for the business community. On India, Deepak Lal (University College London) analyses the lack of economic rationale in decision making and calls for greater emphasis on social profitability. Leopoldo Solís, Subdirector General, Banco de México SA, Mexico City, on Mexico, shows decisions to be strongly influenced by private interests and to be made largely on the basis of commercial profitability. Irma Adelman (University of Maryland, College Park) and Larry Westphal (World Bank), on the Republic of Korea, indicate that decision making there has become highly refined through use of programming models. In the essay on Turkey, Anne O. Krueger (University of Minnesota) and Baran Tuncer (Boğaziçi University, Istanbul) emphasize the *ad hoc* nature of decision making.



09162

CONTENTS

09163

09164

09165

09166

09167

Figure

Tables

I. Statistics and methodology*

The starting point for this study is the premise that for many, perhaps most developing countries, the process of selecting industrial priorities has been piecemeal and only distantly related to the attainment of national goals. Institutions involved in the selection process often play adversary, rather than co-operative, roles. Decisions, both public and private, have been conflicting, having frequently been made in isolation on the basis of narrow vested interests. They have not been developed within a consistent framework reflecting rational choice from among feasible alternatives. Given the need for such a framework, however, methodological criteria proposed in recent years by theoretical economists are being put into practice to a very limited extent, partly because data requirements (the cost of acquiring reliable information), and skilled manpower requirements (the cost of training or importing economic analysts) may be high and partly because such criteria have tended to focus on economic efficiency without adequately taking into account social objectives such as income distribution and employment, political constraints on policy change, and problems associated with the lack of institutional infrastructure. Such criteria should be easier to apply, take political reality into greater account and focus more on socio-economic, rather than simply economic issues.

The question of reality, that is, divergence between the practice and the theory of selecting industrial priorities, may be illustrated by the following fictitious conversation:

PROMINENT ECONOMIC ADVISER: Mr. Minister, you must alter policies so as to promote priority industries and discourage non-priority ones.

MINISTER OF INDUSTRY: Very sound advice, but how do I know a priority from a non-priority industry?

PROMINENT ECONOMIC ADVISER: According to my never-fail linear programming model, A, B and C are your priority industries.

MINISTER OF INDUSTRY: But A provides no employment, B is making ever-increasing losses and C is owned by a family supporting the political opposition. It seems to me that in this case we can do without your never-fail linear programming model!

The study indicates that, at least for some of the countries examined, such divergence of viewpoints between the practitioner and the theoretician, or lack of dialogue between political decision maker and economic technician,[1] may be a serious problem that needs to be overcome if the process of selecting industrial priorities in these countries is to be improved.

This chapter discusses some statistical indicators of industrial development in Brazil, India, Mexico, Republic of Korea and Turkey on a comparative basis. Next,

*Secretariat of UNIDO.

[1] Such as the iterative procedure suggested in *Guidelines for Project Evaluation* (United Nations publication, Sales No. 72.II.B.11).

the main methodological alternatives currently being suggested by theoretical economists as a basis for selecting industrial priorities are briefly reviewed. Finally, a conceptual outline of the selection process, which may be compared with the experience of the five countries as examined in chapters II-VI, is presented.

Statistical indicators of industrial development

Tables 1-5 show some key indicators of industrial development in Brazil, India, Mexico, the Republic of Korea and Turkey in terms of the significance, similarities and differences in the manufacturing sector in the five countries. Contrasts in the manufacturing sectors of India and the Republic of Korea are particularly striking. In India, the manufacturing sector is small in proportion to GDP, but large relative to total manufacturing value-added (MVA) of the developing countries. Moreover, Indian MVA growth is low, and manufactured exports account for a relatively small proportion of those of the developing countries; the opposite is true for the Republic of Korea.

Table 1 shows that as of 1975, these five countries accounted for about half of total MVA of the developing countries, excluding the centrally planned economy countries of Asia. Brazil's share in the total amounted to about two fifths. During the period 1960-1975, the Republic of Korea's manufacturing sector grew particularly rapidly, at an average annual rate of almost 19 per cent. In India, on the other hand, the MVA growth rate was only about 4 per cent, well below the average.

Table 2 shows that the Republic of Korea's share of MVA in GDP grew remarkably, from 11 per cent in 1960 to 32 per cent in 1975. Turkey's share of MVA in GDP in 1975, almost 22 per cent, also was considerably larger than in 1960. The change in Brazil, India and Mexico was much smaller, but even in these countries the contribution of the manufacturing sector to GDP has been increasingly important.

TABLE 1. MVA, SHARE OF FIVE COUNTRIES IN DEVELOPING COUNTRY TOTAL, 1975, AND MVA GROWTH RATES 1960-1975

(Percentage)

Country	*Share in developing country total, 1975*	*MVA average annual growth rate 1960-1975*
Brazil	19.52	8.33
India	9.80	4.22
Mexico	11.08	8.38
Republic of Korea	4.76	18.61
Turkey	4.32	10.06
Total	49.48	7.86
All developing countries	100.00	7.42

Source: United Nations Statistical Office.

TABLE 2. MVA SHARE IN GDP, 1960 AND 1975, FIVE COUNTRIES AND TOTAL, DEVELOPING COUNTRIES

(Percentage)

Country	*Share of MVA in GDP*	
	1960	*1975*
Brazil	21.45	24.86
India	12.43	15.22
Mexico	19.03	23.03
Republic of Korea	11.10	32.31
Turkey	12.88	21.53
Average, five countries	16.23	21.91
All developing countries	15.40	19.06

Source: United Nations Statistical Office.

Table 3 shows the sectoral composition of MVA in the five countries as of 1970. In each, food, beverage and tobacco industries; textiles, wearing apparel and leather and leather products industries; chemical industries; and metal products, machinery and transport equipment industries (ISIC divisions 31, 32, 35 and 38) accounted for 75-80 per cent of total MVA. Of these, food, beverages and tobacco accounted for 33 per cent of MVA in Turkey, 22 per cent in the Republic of Korea, 21 per cent in Mexico, 17 per cent in Brazil and 14 per cent in India. Wearing apparel and leather and leather products accounted for 31 per cent of MVA in India, 24 per cent in Mexico, 23 per cent in the Republic of Korea, 18 per cent in Turkey and 13 per cent in Brazil. Chemicals accounted for 19 per cent of MVA in Brazil, 12 per cent in India, 16 per cent in Mexico, 20 per cent in the Republic of Korea and 17 per cent in Turkey. Metal products, machinery and transport equipment accounted for 26 per cent of MVA in Brazil, 19 per cent in India and Mexico, 14 per cent in the Republic of Korea and 12 per cent in Turkey. Some product groups such as tobacco manufactures and petroleum refining showed particularly wide country-to-country variation in their contribution to MVA, presumably as a result of differences in factors having an influence on industrial priorities such as local tastes and availability of resources.

Turning to export of manufactures, table 4 shows that, as of 1973, the five countries accounted for 26 per cent of the total for developing countries. The ratio of manufactured exports to MVA varied 7-18 per cent, except for the Republic of Korea, which had a very high ratio of 82 per cent. During the period 1968-1974, the average annual rate of growth in the Republic's manufacturing exports was also very high, 51 per cent. High growth rates during the same period were also recorded by Brazil (44 per cent) and Turkey (40 per cent).

Manufactures accounted for 84 per cent of total exports of the Republic of Korea in 1973, more than half for Mexico and India, but only about two fifths of total exports for Turkey and Brazil (table 5). Most of Turkey's and India's manufactured exports were those classified chiefly by material (SITC 6), as was almost half of Brazil's manufactured exports. For the Republic of Korea, SITC 6 and 8 were important, whereas for Mexico, SITC 6 and 7 were important.

TABLE 3. SECTORAL COMPOSITION OF MVA (ISIC 3), 1970, BY MAJOR GROUP, FIVE COUNTRIES

(Percentage)

ISIC major group[a]		*Country*				
		Brazil	*India*	*Mexico*	*Republic of Korea*	*Turkey*
311-312	Food manufacturing	13.32	8.31	18.24	14.13	15.94
313	Beverage industries	2.27	1.16	2.05	4.50	4.34
314	Tobacco manufactures	1.41	4.27	1.02	3.80	13.02
321	Manufacture of textiles	9.14	21.77	9.94	15.70	13.92
322	Manufacture of wearing apparel, except footwear	1.68	3.79	8.09	6.70	2.32
323	Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel	0.63	1.63	1.43	0.33	0.40
324	Manufacture of footwear, except vulcanized or moulded rubber or plastic footwear	1.65	3.61	5.02	0.66	0.91
331	Manufacture of wood and wood and cork products, except furniture	2.53	4.23	1.54	2.89	1.41
332	Manufacture of furniture and fixtures, except primarily of metal	2.05	0.80	0.51	0.53	0.20
341	Manufacture of paper and paper products	2.59	1.28	2.46	2.28	1.72
342	Printing, publishing and allied industries	3.58	2.09	3.07	3.15	1.51
351	Manufacture of industrial chemicals	5.83	4.03	2.56	6.45	0.81
352	Manufacture of other chemical products	4.87	4.68	5.22	3.82	3.83
353	Petroleum refineries	2.01	1.33	5.84	5.46	10.08
354	Manufacture of miscellaneous products of petroleum and coal	2.01	0.10	0.20	1.09	0.20
355	Manufacture of rubber products	1.94	1.41	1.33	1.58	1.82
356	Manufacture of plastic products not elsewhere classified	1.87	0.26	0.41	1.59	0.70
361	Manufacture of pottery, china and earthenware	1.39	0.45	0.10	0.45	0.91
362	Manufacture of glass and glass products	0.94	0.85	1.64	0.77	0.80
369	Manufacture of other non-metallic mineral products	3.61	4.09	3.28	4.38	3.33
371	Iron and steel basic industries	4.01	5.74	3.89	2.53	6.66
372	Non-ferrous metal basic industries	4.01	1.34	1.33	0.34	1.81
381	Manufacture of fabricated metal products, except machinery and equipment	3.35	5.70	4.10	1.64	4.24
382	Manufacture of machinery, except electrical	7.35	4.08	3.07	1.93	2.62
383	Manufacture of electrical machinery apparatus, appliances and supplies	5.34	3.33	4.81	4.17	1.82
384	Manufacture of transport equipment	8.69	3.34	6.66	5.44	3.33

ICIS major group[a]		Country				
		Brazil	*India*	*Mexico*	*Republic of Korea*	*Turkey*
385	Manufacture of professional and scientific, and measuring and controlling equipment not elsewhere classified, and of photographic and optical goods	0.95	2.55	0.41	0.34	0.10
390	Other manufacturing industries	0.95	3.73	1.74	3.32	1.20

Source: United Nations Statistical Office.

[a] See *International Standard Industrial Classification of all Economic Activities* (United Nations publication, Sales No. E.68.XVII.8.).

TABLE 4. MANUFACTURED EXPORTS, SHARE OF FIVE COUNTRIES IN DEVELOPING COUNTRY TOTAL, 1973, RATIO OF MANUFACTURED EXPORTS TO MVA, 1973, AND GROWTH RATE OF MANUFACTURED EXPORTS, 1969-1973

(Percentage)

Country	*Manufactured exports, share in developing country total, 1973*	*Ratio of manufactured exports to MVA, 1973*	*Manufactured exports, average annual growth rate, 1969-1973*[a]
Brazil	8.02	7.64	44.21
India	4.62	18.15	18.02
Mexico	4.36	14.84	23.08
Republic of Korea	7.93	82.46	51.03
Turkey	1.34	7.02	39.56
Total, five countries	26.27	17.51	34.28
All developing countries	100.00	20.49	22.98

Source: United Nations Statistical Office.

[a] For Brazil, Republic of Korea and Turkey, 1968-1974; for India, 1969-1974; for Mexico, 1968-1973.

TABLE 5. STRUCTURAL COMPOSITION OF MANUFACTURED EXPORTS, FIVE COUNTRIES, 1973, BY SITC SECTION

(Percentage of SITC 0-9)

Country	*Manufactured exports (SITC 5-8)*	*Chemicals (SITC 5)*	*Manufactures classified chiefly by material (SITC 6)*	*Machinery and transport equipment (SITC 7)*	*Miscellaneous manufactures (SITC 8)*
Brazil	19.82	1.77	9.19	4.90	3.96
India	53.09	1.97	40.60	4.22	6.30
Mexico	51.93	6.42	20.44	17.62	7.45

TABLE 5 *(continued)*

Country	*Manufactured exports (SITC 5-8)*	*Chemicals (SITC 5)*	*Manufactures classified chiefly by material (SITC 6)*	*Machinery and transport equipment (SITC 7)*	*Miscellaneous manufactures (SITC 8)*
Republic of Korea	84.21	1.51	34.10	12.25	36.36
Turkey	18.06	1.06	11.94	0.68	4.38

Source: United Nations Statistical Office.

Methodologies for assessing industrial priorities: a brief review

In recent years various methodologies for evaluating alternative resource allocations have been developed on the basis of optimization and economic growth models, theory of international trade and applied welfare economics. Some of these methodologies have been intended for national, general-equilibrium analysis, some for sectoral or product-level analysis and others for project analysis. Those most relevant to the problem of assessing industrial priorities are discussed below.

Broadly speaking, as the scope of the analysis widens an increasingly simplified view of policy goals and instruments and economic structure is taken. Linear programming models, which permit "optimal" general-equilibrium solutions by imposing constraints on resource use, have provided the main basis for national analysis, but have been little used in assessing industrial priorities because of their highly restrictive assumptions and lack of detailed sectoral specification (Eckaus and Parikh (1968), Goreux and Manne (1973), Manne (1974)). Techniques known as domestic resource cost (Bruno 1972, Krueger 1972), effective protection (Corden 1971) and semi-input-output (Kuyvenhoven 1976), which give partial-equilibrium solutions based on the concept of comparative advantage, have been used for sectoral or product-level analysis. Among project analyses, based on cost-benefit techniques, the *Guidelines for Project Evaluation, Guide to Practical Project Appraisal,* the revised book by Little and Mirrlees (1974) and that by Squire and van der Tak (1975) are probably most representative of the current school of thought.[2]

These methodologies have several characteristics in common. First, an objective function, or statement of what is to be maximized—economic efficiency, planners' preferences or social welfare (however defined), for example—is selected. Secondly, a set of policy instruments reflecting what is believed to be areas of feasible policy control is chosen. Depending on the particular situation, choice may be assumed to be restricted to small changes in a single policy instrument or to be virtually unlimited. Thirdly, using techniques such as input-output analysis, the direct and

[2] A somewhat different approach is taken in the "effects method" of project evaluation. B. Balassa, "The 'effects method' of project evaluation once again" and M. Chervel, "The rationale of the effects method: a reply to Bela Balassa", *Oxford Bulletin of Economics and Statistics,* vol. 39, 1977.

indirect effects of a possible policy change on commodity and factor flows are determined. Fourthly, a set of shadow (i.e. social accounting or planning) prices of commoditis and factors is calculated. If, for example, economic efficiency is taken as the sole objective and constraints on policy change are nil, shadow prices reflect opportunity costs, including those derived through trade possibilities. In some instances market prices may be taken as equivalent to shadow prices, which is to say that social value is reflected by market forces. Fifthly, a criterion for resource allocation and a corresponding set of rules for making policy decisions are proposed. Because of these similarities, the results obtained through use of apparently different methodologies will often be quite close in practice (although differences in treatment of time, for example, will affect results).

The mathematical relationship between net social profitability (NSP) as derived through project evaluation, domestic resource cost of foreign exchange (DRC) and effective protection (EP) is examined below.[3]

NSP is a cost-benefit criterion where activities should be undertaken if and only if the value of commodity output at least equals the value of commodity and factor inputs, with all values expressed in terms of shadow prices. NSP may be defined simply as

$$\text{NSP} = B - (C_i + C_f) \tag{1a}$$

where B is the value of output, C_i is the value of commodity inputs and C_f is the value of direct factor inputs, all expressed in local currency.

Alternatively, costs may be expressed as the sum of domestic factor costs and foreign exchange costs, so that

$$\text{NSP} = B - (C_d + C_e) \tag{1b}$$

where C_d (domestic factor costs) and C_e (foreign exchange costs) are found by breaking down C_i and C_f into their direct and indirect domestic factor and foreign exchange costs. For example, direct repatriated profits from foreign investment and imported materials used indirectly in producing inputs included in C_i would be added to C_e. Other components of C_f and the indirect domestic factor content of C_i would be added to C_d.

Equation (1b) also may be rewritten to express the benefit and foreign exchange costs in terms of foreign currency so that

$$\text{NSP} = \bar{B}X - (C_d + \bar{C}_e X) \tag{1c}$$

where $\bar{B}$ and $\bar{C}_e$ are the benefit and foreign exchange costs expressed in foreign currency and X is the shadow exchange rate.

DRC is a measure of the cost of an activity in terms of domestic resources used directly and indirectly (in local currency), relative to foreign exchange gains through export or import substitution (in foreign currency). Activities should be undertaken if DRC is less than the shadow exchange rate, for a DRC $> X$ implies that the domestic resource cost of gaining foreign exchange is too high relative to opportunities available in other activities. DRC may be defined as

$$\text{DRC} = C_d / (\bar{B} - \bar{C}_e) \tag{2}$$

[3] To keep the analysis simple, semi-input-output, NSP as derived through linear-programming models and differences between various project evaluation methodologies are not considered here. Also, the time dimension is disregarded, shadow prices are taken to reflect international trade opportunities and output is assumed to be a tradable product.

DRC has for the most part been used at the sectoral or product level as a simplified cost-benefit criterion (no time dimension, shadow prices of domestic factors generally taken as given, little emphasis on objectives other than efficiency). It is basically equivalent to NSP, however. If the expression for C_d derived from (2) is substituted into equation (1c), we find

$$\text{NSP} = \bar{B}X - \text{DRC}(\bar{B} - \bar{C}_e) - \bar{C}_e X \tag{3a}$$

Rearranging, we have

$$\text{NSP} = (X - \text{DRC})(\bar{B} - \bar{C}_e) \tag{3b}$$

From equation (2) it can be seen that if the net foreign exchange gain $(\bar{B} - \bar{C}_e)$ is positive,[4] then DRC > 0. Further, from equation (3b) it can be seen that if DRC $< X$, then NSP > 0. Thus industrial priorities will receive the same ranking when the DRC criterion, with acceptance of an activity if and only if DRC $< X$, is applied as they will when the NSP criterion, with acceptance when NSP > 0, is applied.

Although in the past there has been considerable controversy regarding the relationship between DRC and effective protection (EP), with some arguing that they were equivalent and others arguing that one or the other provided a superior criterion for assessing industrial (and other) priorities, it is now clear that EP, as generally defined, is not equivalent to DRC and it does not provide an acceptable criterion for assessing industrial priorities (Pearson 1976; Srinivasan and Bhagwati 1978).

EP may be defined as

$$\frac{V^*}{V} - 1 \tag{4a}$$

where V is value added at international (shadow) prices and V^* is value added at domestic (market) prices. Expressed in the cost-benefit terms of previous equations, EP equals

$$\frac{(B^* - C_i^*)}{(B - C_i)} - 1 \tag{4b}$$

where B^* and C_i^* are measured at domestic (market) prices. Thus EP is simply the ratio, expressed in per cent, of the net commercial benefit to the net social benefit of an activity when domestic factor costs are disregarded. EP may be useful in showing the degree of divergence between international and domestic value added, but it does not provide a satisfactory criterion for ranking resource allocations. Even if the EP equation is modified to include domestic factor costs valued at shadow prices (in the denominator) and at market prices (in the numerator), NSP (the denominator) may be positive; but EP may be positive or negative, depending on the sign of the numerator, net commercial profit. Calculations of EP and DRC at the industrial subsector level have been made for many developing countries (Little, Scitovsky and Scott (1970), Balassa (1971), Bhagwati, Krueger *et al.* (1975-77)).

Although these methodologies represent a substantial advance over earlier techniques for planning and evaluation of industrial development policies (Chenery 1961), they have aroused much criticism because of assumptions made regarding objectives, instruments and economic structure. Areas of disagreement include the extent to which detailed and accurate economic data are available, the acceptability of various (often implicit) value judgements built into the analysis and the

[4] If $(\bar{B} - \bar{C}_e)$ is negative, the activity should be rejected under both DRC and NSP criteria.

administrative feasibility of policy change. An essential part of the problem would seem to be that criteria intended to assist in selecting industrial priorities have been formulated without giving adequate attention to the real world in which they are to be used.

Outline of the selection process

Analysis of the process of selecting industrial priorities requires that we identify decision makers, their objectives and areas of policy control, possible conflicts among decision makers and criteria used to choose from among alternative sets of industrial priorities. We also need to look at the outcome of the selection process, that is, the resulting priorities and investment pattern, and its influence on industrial structure and growth and on the size and distribution of income.

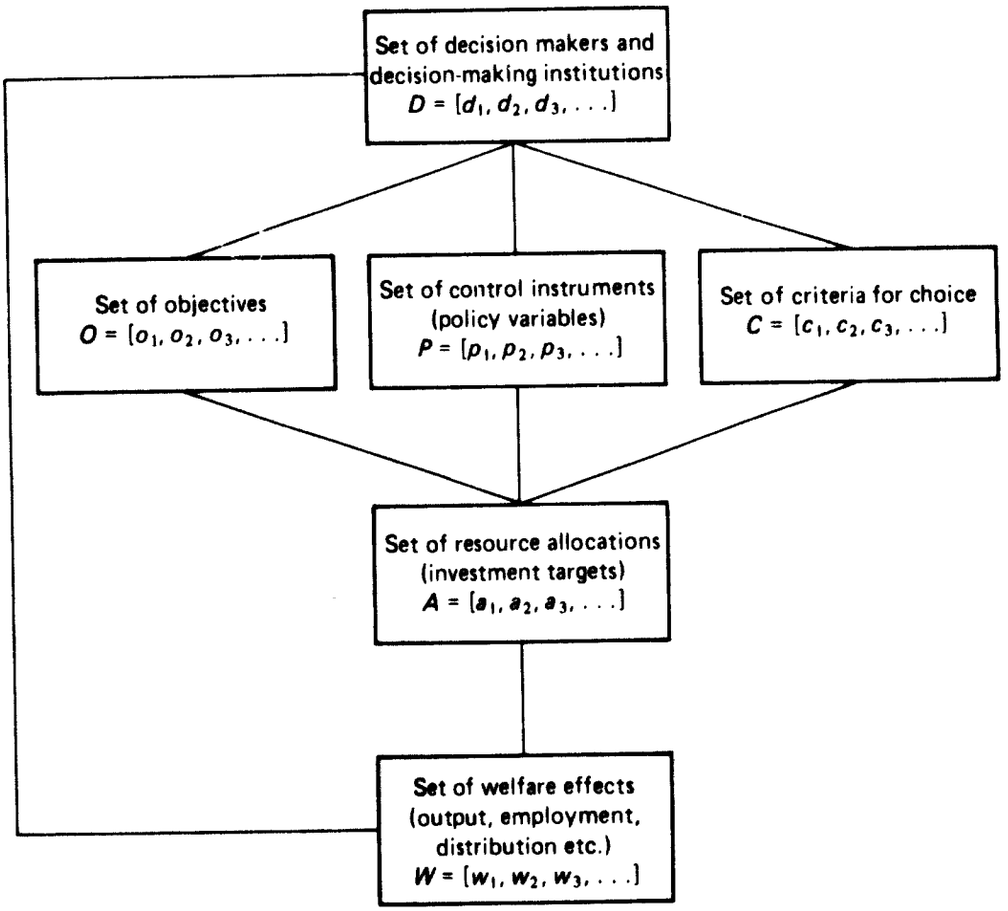
We may ask what institutions (planning commission, finance ministry, industrial development ministry, international trade ministry, political bodies, regional organizations, public enterprises, chambers of commerce, World Bank etc.) play a role in setting industrial priorities? What are their functions and powers? To what extent are institutions interdependent? To what extent are relations between institutions characterized by co-operation or confrontation? Are individual personalities important? To what extent are private market forces involved?

We may also ask what specific criteria and methods, if any, are used to establish industrial priorities. To what extent are objectives other than economic growth, such as increased employment or balanced income distribution among social groups or regions, involved? Have criteria been used consistently, and to what extent do criteria accepted by different institutions conflict? To what extent are priorities influenced by *ad hoc* judgements? What role is played by lobbyists and political pressure groups? By ignorance, corruption and administrative difficulties?

Regarding implementation and results, we may ask, have the industrial priorities established been translated into investment decisions that will be effective in achieving national goals? If not, why? Do existing policies in particular areas (trade, exchange rate, monetary supply, taxation, investment licensing, wage and price controls etc.) complement or conflict with established industrial priorities? To what extent do the objectives of the private sector, which may have ultimate control over investment decisions, conflict with public policy aims? Has the system resulted in a reasonable allocation of resources within the industrial sector? If not, is it because of the faulty setting of priorities? If so, what can be done to improve existing methods of selecting industrial priorities?

The figure shows a highly simplified view of the selection process. Moving from top to bottom, we identify first the decision makers and decision-making institutions. Next we identify their objectives, control instruments and criteria for making choices. These are combined to give an allocation of resources within the industrial sector, which, in turn, is translated into welfare effects, that is, the impact of resource allocation decisions on the economic structure. Finally the economic structure is shown as providing feedback to the decision makers, their objectives, instruments and choice criteria and the resulting resource allocation.

In contrast to the abstract view represented in the figure we now turn to the actual practice of Brazil, India, Mexico, the Republic of Korea and Turkey in selecting industrial priorities as of the mid 1970s.



Schematic view of the selection process

Bibliography

Balassa, B. The "effects method" of project evaluation once again. *Oxford bulletin of economics and statistics* (Oxford) 39, 1977.

Bhagwati, J. *and* T. N. Srinivasan. Shadow prices for project selection in the presence of distortions: effective rates of protection and domestic resource costs. *Journal of political economy* (Chicago) 86, 1978.

Bruno, M. Domestic resource costs and effective protection: clarification and synthesis. *Journal of political economy* (Chicago) 80, January/February 1972.

Chenery, H. Comparative advantage and development policy. *American economic review* (Nashville, Tenn.) 51, March 1961.

Chervel, M. The rationale of the effects method: a reply to Bela Balassa. *Oxford bulletin of economics and statistics* (Oxford) 39, 1977.

Corden, W. The theory of protection. London, Oxford University Press, 1971.

Eckaus, R. *and* K. Parikh. Planning of growth. Cambridge, MIT, 1968.

Foreign trade regimes and economic development. *By* J. Bhagwati *and others.* New York, Columbia University Press, 1975-77.

Goreux, L. *and* A. Manne, *eds.* Multi-level planning: case studies in Mexico. Amsterdam, North Holland Publishing, 1973.

Krueger, A. Evaluating restrictionist regimes: theory and measurement. *Journal of political economy* (Chicago) 80, January/February 1972.

Kuyvenhoven, A. The integration of project and sector analysis: some further remarks. *Oxford bulletin of economics and statistics* (Oxford) 38, 1976.

Little, I. *and* J. A. Mirrlees. Project appraisal and planning for developing countries. London, Heinemann, 1974.

Little, I., T. Scitovsky *and* M. Scott. Industry and trade in some developing countries. London, Oxford University Press, 1970.

Manne, A. Multi-sector models for development planning. *Journal of development economics* (Amsterdam) 1, 1974.

Pearson, S. Net social profitability, domestic resource costs and effective protection. *Journal of development studies* (London) 12, July 1976.

Squire, L. *and* H. van der Tak. Economic analysis of projects. Baltimore, Johns Hopkins, 1975.

The structure of protection in developing countries. *By* B. Balassa *and others.* Baltimore, Johns Hopkins, 1971.

United Nations. Guidelines for project evaluation. [Prepared by P. Dasgupta, S. Marglin and A. Sen]
Sales no.: 72.II.B.11.

_____Guide to practical project appraisal: social benefit-cost analysis in developing countries. [Prepared by J. Hansen]
Sales no.: 78.II.B.3.

09163

II. Industrial priorities in Brazil*

The institutions and the instruments

The first question that arises in determining who sets industrial priorities in any country is how investment is divided between the public and private sectors. In Brazil, private and public decision makers exert considerable influence on each other, and therefore it is often difficult, and indeed almost beside the point, to decide which sector is making the decisions and which sector is following. Government influence is exerted through many instruments, including not only direct government investment and influence on the investments of partly public firms but also loans and equity financing from government and from private banks, special incentives, taxes on domestic production and on trade and price controls. At the same time the influence of private industrialists on government policy has been pervasive in recent years.

Direct public investment has been of great importance in steel, petroleum and chemicals, but unimportant in the other manufacturing sectors. Of course, heavy government investment in transportation, electric power, other infrastructure and iron ore mining also affects the manufacturing sector as a whole.

Substantial government participation in the iron and steel industry began only after the industry had grown to quite a respectable scale. Iron and steel making was started by private entrepreneurs while Brazil was still a colony of Portugal. By 1930 the industry supplied 95 per cent of apparent consumption of pig iron and 85 per cent of apparent consumption of steel[5]. This growth was based on local consumption and local raw materials: rich iron ore deposits and charcoal; the latter, used almost exclusively instead of coal for iron ore reduction in early years, came at first from forests and later from eucalyptus plantations created for that purpose. It has been pointed out that this industry has developed "naturally": i.e., as a result of comparative advantage and market forces rather than of deliberate policy.

Since the 1940s, however, the Government has played a major role in the continued expansion of the industry by establishing modern, larger, more capital intensive integrated plants. Today, government firms account for over half of the steel industry's production.[6] The three largest companies are CSN, a wholly government-owned firm set up in the 1940s, COSIPA and USIMINAS, which are government-controlled firms dating from the 1950s and 1960s.

Petroleum production and refining today are at far higher levels than they would have been without direct government intervention. The petroleum sector is

*Joel Bergsman (World Bank). This study was done in 1975, before the author joined the World Bank.

[5] Werner Baer, *The Development of the Brazilian Steel Industry* (Nashville, Tennessee, Vanderbilt University Press, 1969), p. 87.

[6] Werner Baer, Isaac Kerstenetsky and Annibal V. Villela, "The changing role of the state in the Brazilian economy", *World Development*, November 1973.

dominated by Petrobras, a government enterprise founded in 1953 and now the largest company in Brazil. Petrobras monopolizes exploration – exploration by private firms is hard to imagine – and accounts for over half of existing and all new refining capacity and about half of sales. In 1968, Petrobras entered the petrochemical sector in earnest with the founding of its subsidiary Petroquisa.

The Government decided to enter these sectors for two basic reasons: *(a)* it assumed that national economic development could proceed only if highly autarkic policies were adopted; and *(b)* it was strongly nationalistic. That is, growth through exports and international specialization was not thought to be feasible to any great extent, and development of import substitution required domestic production of basic inputs so as to reduce the need for foreign exchange; nationalistic desires for self-sufficiency and independence led to the same policy. Given these ideas, high public (as opposed to private) investment in these fields was, apparently, something close to a necessity. Extensive exploration for petroleum (and, to a lesser extent, processing) seemed so far from profitable that truly draconian incentives would have been required to induce private activity. Moreover, these measures would almost certainly have had to include high market prices, an outcome antithetical to import substitution in lines that use petroleum products. In the steel industry the rate of return for private enterprise was good, but the huge amounts of capital required by large, modern integrated mills were not forthcoming from private sources.[7] Government equity participation reduced the amount of private capital needed and also provided an implicit promise that the industry would be well treated in the future.

To move now from direct public investment to the activities of government banks, only the National Economic Development Bank (Banco Nacional de Desenvolvimento Economico–BNDE) has had a major effect on industrial priorities. In its early period, 1952-1964, 59 per cent of BNDE resources went to energy and transport and 37 per cent to manufacturing. Twenty-five of the latter 37 percentage points went to steel and 4 to chemicals. Most of the rest was divided among motor vehicles, non-ferrous metals, shipbuilding, pulp and paper and other metal products. After 1964 BNDE shifted from providing major assistance for large capital projects providing working capital and smaller loans to more firms in a wider variety of industries. Assistance to buyers of Brazilian-made capital equipment was a major focus of this activity; BNDE has thus helped this sector significantly in the last decade even though its reported sectoral allocations do not show this effect. During the period 1966-1969, BNDE devoted between one third and one half of its total resources to industrial sectors other than steel; the share going to steel dropped to less than 10 per cent. Electricity, transport, and communications became important once again, rising to over one third.[8]

BNDE investments in infrastructure are the non-surprising response to the need for infrastructure. Early allocations to steel reflect the need for public investment in that sector explained a few paragraphs earlier, while the shift during 1964-1966 can now be seen as a temporary desire–since forgotten–to reduce the role of public capital in the economy.

The unimportance of government investment in other parts of manufacturing can be seen from the low total of government investment–4 to 6 per cent of GDP during the 1950s and 1960s (source: national accounts)–and the low share of that

[7] For details see Baer, *op. cit.*, pp. 79-83.

[8] *BNDE Annual Reports* (author's calculations).

total that went to manufacturing–about 2 per cent in 1969.[9] Thus, in 1969, a representative year, public investment in manufacturing amounted to roughly 0.12 per cent of GDP (2 per cent of 6 per cent). Further evidence includes industry-wide computations reported by Morley and Smith,[10] where the only sectors in which government enterprises are even mentioned are metals, chemicals (including petroleum) and transportation equipment (where the government share is 3 per cent); and the annual economy-wide survey, "Who's Who in the Brazilian Economy" published by the magazine *Visão* (e.g., 26 February 1973), where the only sectors in which any public firms are among the 10 largest are mining, metals, public utilities and petroleum.

Thus public investment has markedly affected investment allocation within manufacturing–favouring principally steel and petroleum, and to a lesser extent certain chemicals. Public investment has also increased investment in manufacturing as a whole, through heavy investments in electricity, transport and other physical infrastructure. Public investment in infrastructure has been an important part of the 1967-1974 "Brazilian miracle". However, most other allocation within manufacturing has not been greatly influenced by direct public investment.

Other government policies have had, however, notable effects on industrial priorities. These effects flow from the use of instruments such as tariffs and export incentives and from less structured but at least equally important instruments such as concessions granted through consultative groups (principally tax exemptions and concessionary financing), price controls or other procedures.

While most industrial investment decisions in Brazil remain formally in private hands, entrepreneurs are subject to strong and pervasive government influence. For a private investor seeking loans, credit sources are largely public. Over 50 per cent of commercial banking (by value of loans) is government controlled. Other sources of credit are BNDE, the Federal Development Bank for the Northeast (Banco de Nordeste–BNB), and state development banks. If duty-free imported equipment is desired, the Foreign Trade Office of the Bank of Brazil (Carterio de Comercio Exterior–CACEX) must approve the exemption. When production begins, the Government may review the initial price to be charged and any subsequent increases; failure to satisfy the price commission may result in the calling of loans and other unpalatable measures. In short, the Government has the power and the instruments to make, shape or break any industrial venture in the country, even though the deliberate exercise of that power in specific cases is limited to only a small share of investments.

This government influence was exercised in the past through formal consultations. During the 1950s, co-ordinated government policies relevant to investment in certain sectors were designed by "executive groups" *(grupos executivos)*. These groups, which functioned in the automotive, shipbuilding, capital goods, chemicals and iron-ore mining sectors, were high-level bodies composed of representatives with authority from relevant ministries, BNDE etc. They worked closely with representatives of private firms to plan the development of the sector and the policies to be used to promote that development.

[9] Fernando A. Rezende da Silva, *Avaliacão de setor publico na economia Brasileira* (Rio de Janeiro, IPEA, 1974), p. 73.

[10] Samuel A. Morley and Gordon Smith, "Import substitution and foreign investment in Brazil", *Oxford Economic Papers*, March 1971.

In the 1950s, the very existence of an executive group meant that a decision had been taken to promote investment in the sector. The group's purpose was to co-ordinate the granting of credit and tax, import and other benefits. In return for these favours, the Government bargained for and received the investments it wanted, and in addition the investors agreed to substitute progressively domestic for imported inputs, among other things. In most cases the groups put together a powerful package of instruments, including credit allocation and tax incentives, and the industry was established.

The executive groups did not spend much time analysing the decision to promote the sector as a whole, or the social costs and benefits of individual projects to be approved. Rather, they considered the markets, management capacity of the firms and technical and financial feasibility of projects. The expected financial return was as much the result of the decisions taken by the group as it was a subject of their deliberations.

During the 1960s the executive groups became less important. Towards the end of the decade and through the early 1970s, a number of changes were made. Today's situation was set in 1970 with the establishment of new groups under the Industrial Development Council (Conselho de Desenvolvimento Industrial–CDI) in the Ministry of Commerce and Industry. There are now groups for most of the important manufacturing sectors, and more than half of all manufacturing investment in Brazil is reviewed by a relevant group.[11] But CDI is famous for never disapproving a project, and indeed even its approval is not especially important because the groups no longer speak for the ministries and banks that decide on tax exemptions, concessionary credit etc. Thus, co-ordination appears to be greater today than it was during the 1950s, but the opposite is in fact the case.

In recent years the most important government influence on industrial priorities has been exercised through the tax system. The instruments are import duties and duty exemptions (non-tax import regulations are also important) and export incentives, which consist almost completely of tax exemptions.

Protection against imports – counting not only taxes but also the price effects of other measures – is high in Brazil, and its variance among manufacturing sectors is also high. For a 43-sector disaggregation of manufacturing, product protection in 1970 ranged from –25 to +158 per cent, with a mean, weighted by total supply, of 36 per cent.[12] The changes through 1973 increased the variance but did not greatly change the mean of this distribution; more recently, the mean has almost certainly increased. Quantitative analysis of the effects of protection during the period 1949-1962 showed that, of a 20-sector breakdown of manufacturing, 10 sectors had significant imports at the start of the period. Of these, the three receiving highest protection experienced the most import substitution (electrical equipment, transport equipment and plastics), while the other seven received less protection and had lower import substitution (non-metallic mineral products, metals, machinery, paper, chemicals, pharmaceuticals and miscellaneous).[13]

[11] Projects approved by CDI amount to roughly 20 per cent of gross fixed investment in the economy as a whole. Edmar L. Bacha and others, *Analyse governmental de projetos de investimento no Brasil*, 2nd ed. (Rio de Janeiro, IPEA, 1972), pp. 33 and 34.

[12] Joel Bergsman, "Foreign Trade Policy and Development", in H. Jon Rosenbaum and William G. Tyler, eds., *Contemporary Brazil: Issues in Economic and Political Development* (New York, Praeger, 1972), p. 86.

[13] Joel Bergsman, *Brazil: Industrialization and Trade Policies* (London, Oxford University Press, 1970), pp. 102-110.

The protectionist policies were designed to promote rapid industrialization, including not only finished goods but most producer goods as well, and they were effective. For the last 10 years, imports have not been a significant part of total supply of any manufactured goods in Brazil except for heavy equipment and some chemicals. Structural changes have been slower during this period; the industrial boom that started in 1967 has responded more to changes in domestic demand than to policies designed with investment-allocation goals as important objectives.

The federal excise tax probably has a marginal effect on industrial allocation. The tax rate varies among products, but except for a few items such as tobacco and liquor the rates are not more than 20 per cent.

"Incentives to export manufactures", progressively strengthened since their introduction in 1968, consist mostly of tax exemptions and credits and vary greatly among products. In 1970, the impacts differed among sectors by roughly a factor of four, i.e., the incentives increased export profitability four times as much in some sectors as in others. The most favoured sectors were tobacco products, non-ferrous metals, food products, thread and yarn, textiles, metal products, shipbuilding and railroad vehicles. Least favoured were confectionary products, shoes, wood products and furniture and non-metallic mineral products.[14] These incentives strongly affect profits in exports of manufactures. As of 1970, removal of the incentives would have reduced the sales price/variable cost ratio from 1.5 to 0.7 and would have reduced the sales price/variable cost ratio from 1.5 to 0.7 and would have reduced profits by 350 per cent (N.B.: greater than 100 per cent, i.e., profits would have been negative) for manufacturing as a whole. However, the export incentives within manufacturing are completely haphazardly distributed among the sector, and the growth of exports has not in general been greatest in those sectors where incentives have been highest, but rather in those having a comparative advantage.

The sharing of power over industrial priorities among ministries is not fixed in Brazil. Since the military coup in 1964, the location of power to make decisions has depended more on who occupied what position than on anything else; but in any case, the Government acts in a highly unified and coherent manner. The Ministry of Planning was supreme during the period 1964-1967; since 1967 the Finance Ministry has been the most important, although since 1974 its near-absolute pre-eminence has diminished. BNDE, attached to the Office of the President in its early days, is now subordinate to the Ministry of Planning. However, that ministry has been transformed into a kind of economic executive secretariat for the Office of the President. The Ministry of Commerce and Industry usually plays a significant but subsidiary role. The Central Bank is largely controlled by the Finance Ministry. Power over customs duties, exemptions etc. is shared between the Customs Policy Council (Conselho de Politica Aduaneira–CPA), now quite subordinate to the Finance Ministry, and CACEX. These institutions are not always in precise accord, but the Minister of Finance can obtain what he wants in any important ruling.

To complete the survey of agencies and instruments, international lending agencies (United States Agency for International Development, the World Bank) and foreign private investors should be mentioned. It seems reasonable to expect that the standards, internal processes and interests of these groups may affect the overall allocation of investment in the recipient country. Past preferences of these institutions and investors for projects in manufacturing (and in infrastructure that supports it) were consistent with Brazil's interest in industrialization; the changing

[14] Joel Bergsman, "Foreign trade policy and development", *loc. cit.*, pp. 83-85.

emphasis of the aid agencies on agriculture, rural development and income redistribution may affect Brazilian allocation in the future. The attractiveness of Brazil to transnational manufacturing corporations, which have provided capital, technology and experts, has assisted Brazil's conscious drive to industrialize. Thus, the allocation priorities of foreign investors and those of the Brazilian Government have often been quite close, and the effects of foreign investment have in general been to promote government objectives rather than to change them.

Finally, the absence of licensing, quotas or other direct government intervention in economy-wide or manufacturing-sector investment allocations should be noted. Government influence, while pervasive, is direct only in a few manufacturing sectors, and indirect elsewhere.

The analysis in this study concerns intersectoral priorities. However, in the last 10 years Brazil has placed a high priority on regional development and is likely to do so even more in the future. Several programmes, most notably those based on the well-known Article 34-18, encourage investment in the north-east. More recently, problems arising from huge growth in the São Paulo metropolitan area have stimulated interest in policies designed to divert some of that growth to other areas in the future.

How priorities are determined

Throughout most of the last 30 years, Brazilian policy makers have agreed to pursue the goal of industrial growth, have implemented policies to achieve that goal and have succeeded. They seem to have embarked on this course for several reasons: they perceived a need to substitute domestic production for imports (e.g., the ECLA-Prebisch thesis of the 1950s); they wished to follow the path of the industrial countries, to modernize; they were influenced by nationalism and even by the idea that income elasticities of demand and/or cross-sectional "patterns of industrial growth"[15] should determine the structure of growth in a developing country. Since these factors all lead to the same policies, the separate importance of each is impossible to determine.

Setting priorities within the industrial sector was not co-ordinated. At no time did any person or institution attempt to set goals and to implement programmes to accomplish a specific pattern of industrial growth. Actual growth followed a typical and perhaps natural sequence. It proceeded first in import substitution from consumer non-durables to consumer durables and intermediate goods to capital goods. After the import substitution was virtually complete, exports of manufactures began to grow.[16] The pattern is thus consistent with the logic of "backward linkages". The structure of development in Brazil did not appear to follow intuitive perceptions of static comparative advantage.

Before the late 1960s, policy was based on autarkic assumptions. Thus domestic industry was promoted over agriculture and mining. Within industry, not only finished goods but important raw materials and processed inputs were to be produced domestically wherever possible. This strategy did not always fly in the face of comparative advantage (e.g., Brazil is fairly competitive in steel), but rather was pursued largely irrespective of it. More recently, the success of offering export

[15] H. Chenery, "Patterns of Industrial Growth", *American Economic Review*, September 1960.

[16] Bergsman, *Brazil: Industrialization and Trade Policies*, *op. cit.*, pp. 89-95.

incentives for manufacturing has significantly modified attitudes about autarky, but the policies in use are only a complex patching up of the old policies designed for more autarkic development. Thus, since even before 1957 both infant and mature industries have enjoyed high protection (although infant industry arguments are *prima facie* nonsense for mature industries, and political influence was probably the major cause of the policy). On the export side, incentives are largely the mirror image of a tax structure designed for other purposes, and therefore their structure bears little or no relation to private profitability, likely comparative advantage or any other economic rationale that can be imagined.

Brazil's sequence of growth did not, of course, occur accidentally. As noted, exchange-rate policies, tariffs and other import controls, investments and investment subsidies promoted the allocation of resources over time. However, just what were causes and what were effects or who were the initiators and who the responders in policy design is not completely clear.

Businessmen even more than policy makers know that the list of a country's imports constitutes a good market survey. Thus, the question arises whether policy followed private investors' wishes or vice versa. Observers of the Brazilian scene differ on this score. Public officials must have had some ideas about the priorities to be given to different sectors. For example, to what extent and how domestic production of capital goods should be promoted has been an issue for the last 8 or 10 years, if not longer. But policies concerning tariffs, exemptions from tariffs for certain importers, lines of credit etc., owed their design at least as much to the entrepreneurs who stood to gain or lose from them as to public officials' view of what was somehow "best" or "efficient" for the country. Indeed, one main reason for the boom in industrial growth since the late 1960s is precisely that the Government listened to the private sector and accommodated its wishes to a great degree. Observers of earlier periods also stress the high degrees of consultation and accommodation during the 1950s.[17]

Thus, for most of the last 30 years priorities within the industrial sector have been shaped by an interplay of public officials and private-sector investors. Public officials have been decisive in a few great events such as establishing the automobile industry and directly promoting growth in steel, while private response to opportunities for profit has been of great importance in setting priorities and has significantly affected the very policies that in turn affect those profits. The model of private capitalism with heavy State support fits the Brazilian case well.

Formal economic analysis seems to have played a small role, if any, in setting priorities. In the public sector, it has been noted that strong combinations of instruments have been used to promote both manufacturing as a whole and several sectors within manufacturing. The design of these instruments did not proceed from any formal analysis such as optimal growth theory, static or dynamic programming, material balances or social marginal productivity. Public decision makers in Brazil, like their private-sector counterparts, usually consider markets, input availability and

[17] See, for example, Carlos Lessa, "Fifteen years of economic policy in Brazil", *Economic Bulletin for Latin America* (United Nations publication, Sales No. 65.II.G.3), November 1964. One observer has stressed the contrary view emphasizing that technocrats were making policy while relatively immune to political pressures during 1947-1964. Nathaniel H. Leff, *Economic Policy-Making and Development in Brazil: 1947-1964* (New York, Wiley, 1968). The technocrats the author observed making "policy" in Brazil were free only to design the details of policies. The author joins with other skeptical viewers of Leff's thesis in doubting that their predecessors in the 1950s could have been even that independent in the highly political environment of that decade.

financial and technical feasibility; public officials sometimes also follow some notions of modernization, "natural" development sequences or prestige. The study by Bacha and others[18] gives considerable detail about methods of evaluation in use in public agencies around 1970. They found that markets and the financial viability of the enterprise were the important criteria in BNDE; most other public investment banks used similar but often less rigorous criteria. In 1974 the author surveyed many of the same institutions as well as private-sector businessmen who deal with them; and although BNDE usually requires analysis of the internal rate of return (at market prices) with sensitivity analysis for major projects and uses the managerial capacity of the borrower as a crucial criterion, he did not find one public institution that formally employed programming models, shadow prices or other non-market-price criteria.

Considerations of social costs do affect priorities informally. Inefficient coal mining and salt-producing operations were kept going for years to avoid high unemployment in certain areas; other examples could be found. But no formal analysis using the tool kit that economists have designed for such situations seems to have been made. In a few obvious cases, c.i.f. import costs may be substituted for the domestic price of a commodity; for example, Petrobras officials do not ignore the world price of crude oil in their calculations. However, import costs are invariably converted to domestic currency at the official exchange rate, which means that overvaluation due to protection that currently may be roughly 20 per cent and has been considerably higher in the past is ignored.

The Development Agency for the North-East (Superintendencia do Desenvolvimento de Nordeste–SUDENE), which is responsible for development in north-eastern Brazil and must approve use of funds under Article 34-18 as well as financing by BNDE, uses an interesting point system to assign priority ratings to projects according to whether they satisfy certain criteria. The criteria include location in especially poor parts of the region, labour absorption, whether stock is available to the public etc. However, SUDENE approves every project that appears to be financially feasible and whose managers do not appear to be flagrantly incompetent. The priority system determines only how large the concessions may be, and most projects receive very high priority ratings.[19] SUDENE technicians have opinions about which are the priority sectors, but these ideas have no noticeable effects on the allocation of investments. Ther permissiveness of SUDENE is not necessarily bad for the north-east or even for the country as a whole; the point here is simply that efficiency in allocating investment has not been evaluated systematically.

Both public officials and private investors know that policies that affect profits can be changed. Thus, for design or analysis of many large public and private projects, the prices of products and of important inputs, and tax rates, are often policy instruments rather than exogenously fixed parameters, and profits or cash flow are often predetermined rather than endogenous variables.[20]

[18] *Op. cit.*

[19] Bacha and others, *op. cit.*, pp. 56-65.

[20] "... the Government has the power, overnight, to render profitable all investment projects that it wants to be implemented, and to make the ones it does not want to promote financially infeasible ... For all practical purposes, the private profitability of investment projects in Brazil is thus a by-product of the applications of the Government's instruments of economic policy." Bacha and others, *op. cit.*, pp. 21 and 22. While this does not affect the ability to estimate social returns, it does strengthen the belief that profitability calculations are simply made up.

Facts that influence the setting of priorities

Politicians and public officials have known for a few thousand years that societies are not homogeneous and ways to determine or approximate "the" social goals are far from perfect. Even economists have known that at least since Arrow's work.[21] Some economists who think they know how to set industrial priorities recognize this fact while others do not,[22] but none deals with it in a really satisfactory way. Some economists talk of making a technical analysis of the alternatives and presenting the results to the public officials. This proposal implies the acceptance of the goals of whatever public official happens to be occupying the relevant office. In any case the method usually does not work because public officials typically do not think in terms of such analysis and often do not want to have the alternatives well studied. The economist's crucial problem is that in most projects some gain more than others, and all the analyst can do is present his estimates and stop short of any unconditional recommendations unless he is willing to assume the right to choose his own objectives. (This choice, of course, is made by many lending agencies.)

This problem is not limited to methods in which social goals are treated explicitly—as Malan points out. Any set of prices, market or shadow, is in general consistent with some objective functions and not with others, whether the derivation is presented explicitly or not.

The next fact that influences the way priorities are set is uncertainty. This specter pervades almost every aspect of cost-benefit analysis. Investment costs are often badly misestimated—and not only because of inflation of monetary values. The operation of the project is subject to even more uncertainty, and the future of patterns of demand and prices of inputs and outputs are simply impossible to predict.

Such uncertainties can be dealt with by sensitivity analysis in ways that are mechanically satisfying and sometimes even substantively helpful—it is useful to know that the rate of return on project A may well vary between −20 and +60 per cent. But a more serious problem is that some of those unknown future conditions are themselves dependent on whether the project is undertaken and on how it works out. The "learning by doing" phenomenon is only one aspect of this dependence. To say that a decision model of broader scope is required is technically correct, but not helpful if the dependency relationships are not known.

Another fact is that formal project evaluation, by whatever methodology, is almost always undertaken to justify a decision already made rather than to provide a basis for making the decision, a situation especially common in public agencies, international lending institutions, and similar bodies whose workings are highly visible. Here the very process of analysing priorities generates pressures that constrain the decisions that are supposed to flow from the analysis. Many of these institutions have reacted to this problem by promoting sectoral studies, in the hope of improving the projects that they will be under pressure to finance, and by doing prefeasibility

[21] Kenneth J. Arrow, *Social Choice and Individual Values*, 2nd ed. (New Haven, Conn., Yale University, Cowles Foundation, 1963).

[22] An excellent Brazilian critique of one recent project evaluation manual was based on this issue. Pedro Malan, "A rentabilidade macroeconomics de projectos de investimento", *Pesquisa e Planejamento Economico*, December 1972.

studies to obtain at least a rough evaluation before commitment becomes almost inevitable. Both approaches made sense, but they do not solve the problems caused by the existence of multiple objectives and uncertainty.

That project evaluation in public agencies is usually undertaken to justify a decision already taken, or in any case will be needed to justify the decision after it is taken, creates a strong incentive to use market instead of shadow prices. Market prices can be more or less objectively verified, and thus easily defended; shadow prices cannot. (Those whose attacks must be defended against seldom include economists concerned about differences between market prices and social values.) The importance of this need to have a defensible analysis should not be underestimated.

Conclusions

Although plenty of inefficiency can be found in Brazilian manufacturing, very little of it is due to sectoral misallocation–possibly 0.2 per cent of GNP or less, which corresponds to roughly 0.7 per cent (or less) of value added in manufacturing.[23] However, efficiency among plants in the same sector varies widely; in most sectors some firms are highly efficient by international standards while others are not. Even the automotive sector, which has been plagued with difficulties in the developing countries, has one plant in Brazil whose real production costs in the late 1960s were not more than 15 per cent above international levels, with costs of all components taken together 15 per cent less than the export cost of such components from the parent company's home plant, and with a social rate of return estimated to be at least 25 per cent.[24] In the sectors where direct public investment has been most important, the results are also satisfactory. Steel seems reasonably efficient and petroleum may also be, although documentation is lacking in the latter sector.

Trends in exports of manufactures during the last five or six years are consistent with this view. Exports of manufactures (not including semi-processed goods) rose steadily from $202 million in 1967 to $1,366 million in 1973, corresponding to an increase of 12-22 per cent of total export value.[25] Ford (Pinto) engines and Pirelli tires sold in the United States are made in Brazil, and many United States department stores sell towels and shoes from Brazil. However, the value of manufactured exports in each sector is still only a small fraction of total Brazilian production.[26]

The lack of serious misallocation, even in the face of such a thorough-going industrialization as Brazil's, is due to a few basic factors. First, Brazil has the "natural" conditions needed for industrial efficiency. The main requirement is a large market, but it also has abundant raw materials. Other advantages are that industrialization began early and that achievement-oriented immigrants have

[23] Joel Bergsman, "Commercial policy, allocative efficiency and X-efficiency", *Quarterly Journal of Economics*, August 1974.

[24] Bergsman, *Brazil: Industrialization and Trade Policies, op. cit.*, pp. 128-130.

[25] Brazilian government statistics; CACEX.

[26] Failure to find costs above international competitive levels due to misallocation does not, of course, imply optimal allocation.

continued to settle in the country. Secondly, the various governments have intervened about the right amount in the market. Promotion has been strong and flexible enough to get and keep things moving. Brazil's tradition of consultation, informal arrangements, and the basic pro-business government attitude contrasts sharply with (at another extreme) a case such as India, which suffers all the abuses of capitalism along with all the inefficiencies generated by detailed government control of imports and investments.

The efficiency of allocation between industry and agriculture is perhaps even harder to evaluate. Suffice it to say here that Brazilian agriculture appears to be capable of feeding the rapidly growing population quite well, and keeping exports booming at the same time. Malnutrition in Brazil is due to maldistribution of income, not to scarcity of food.

Another aspect of efficiency, outside the central focus of this study, but worth mentioning, is the relative prices of capital and labour and the resulting problem of absorbing labour. Policies have reduced the price of capital and increased the price of labour, and one of the results is that manufacturing employment has grown extremely slowly.[27] By contrast, neutral policies might have increased manufacturing employment by as much as 100 per cent. The biases that did exist certainly had an effect on Brazil's income distribution, but it is not clear that they reduced either static allocative efficiency or GNP growth significantly. Moreover, by 1974, GNP growth had absorbed so much labour that scarcities appeared in unskilled labour in São Paulo and even (according to some reports) in agricultural labour in parts of the north-east.

Considering the misallocation that did occur, one may ask to what extent better analysis would have improved the situation. Evidence suggests that it would have made very little difference. It is, for example, doubtful whether unfavourable conclusions of a cost-benefit study or a programming model would have dissuaded President Juscelino Kubitschek from promoting the automobile industry (one of the early products of which was called the "J.K."); moreover, it has turned out that an automobile industry is not inefficient for Brazil. Most of the gross misallocations that one does find in Brazil were made for political or nationalistic reasons, and there is little reason to believe that a better methodology for evaluation would have changed the situation.

If evaluative criteria are shifted from allocative efficiency and GNP growth, on the one hand, to income distribution on the other, one can conclude that Brazil's growth path and the policies that promoted it probably increased that degree of inequality. However, this result was apparently acceptable to policy makers, or in some cases actively sought after by them; it is doubtful whether any prior analysis of alternatives would have had much impact on policy in this case either. As a former minister said when asked to comment on income distribution in Brazil, capitalism works about the same in Brazil as it does in other countries.

To close this chapter, we may consider how the setting of industrial priorities could be improved in Brazil. Focusing on techniques to improve the allocation of new investments is not the most important way to improve industrial efficiency, although good sectoral studies can furnish rough but useful guidelines as to scale, timing, and (where relevant) location of investments and are also of value where

[27] Joel Bergsman and Arthur Candal, "Industrialization: past success and future problems", in Howard S. Ellis, ed., *The Economy of Brazil* (Berkeley, University of California Press, 1969), pp. 36-40; Bergsman, *Brazil: Industrialization and Trade Policies, op. cit.*, pp. 158-162.

several interdependent projects are at issue, at least where the interdependence is technological and known. One good sectoral study of, say, a plan to expand the electric power industry of a country as big as Brazil can save millions or hundreds of millions of dollars. In an economy like Brazil's, however, where market prices are of paramount importance, the main attention should be shifted from uncertain and at best small improvements in allocating new investment to virtually certain possibilities for cutting costs 10 or 20 or 30 per cent throughout the whole manufacturing sector. This was true in the earlier phase of import substitution and is even more important now that import substitution is almost complete and future structural change will be more a function of changes in domestic or export demand. The main emphases of such a policy are *(a)* to bring relative prices and relative profitability a bit more into line with present and estimated comparative advantage in the near future; and *(b)* to take positive, supporting action to improve technical efficiency. The policy calls for judicious and timely reductions in protection, combined with improvements in infrastructure, re-equipment loans and other necessary support, and followed by export incentives that open up larger markets and a profitable kind of "breath of competition". One version of this recipe has already been applied in Brazil and, while far from perfect, has apparently yielded considerable benefits in terms of both growth and efficiency. Further actions along the same lines, including rationalization of both protection and export incentives, would probably yield additional benefits of growth as well as efficiency.

Bibliography

Baer, Werner. Industrialization and economic development in Brazil. Homewood, Illinois, Irwin, 1965.

Baer, Werner *and* **Michel Herve.** Employment and industrialization in developing countries. *Quarterly journal of economics* (New York) February 1966.

Bhagwati, Jagdish N. *and* **Padma Desai.** India: planning for industrialization. London, Oxford University Press, 1970.

Cline, William. Potential effects of income redistribution on economic growth: Latin America cases. New York, Praeger, 1972.

Fishlow, Albert. Brazilian size distribution of income. *American economic review* (Nashville) May 1972.

_____ Some reflections on post-1964 Brazilian economic policy. *In* Alfred Stepan, *ed.* Authoritarian Brazil. New Haven, Yale University Press, 1973.

Hirschman, Albert O. Development projects observed. Washington, Brookings Institution, 1967.

_____ The political economy of import-substituting industrialization. *Quarterly journal of economics* (New York) February 1968.

09164

III. Industrial priorities in India*

India has developed a complex system of planning, industrial licensing, foreign exchange, price and distributional controls. In principle the various plans are supposed to determine industrial priorities through their five-year programmes for industrial development, and the network of controls is supposed to channel investment into industries with priority. A marked divergence between plan and practice has arisen, however, largely because the instruments used for implementation were inappropriate. Moreover, the basis on which plan targets have been set is also open to question on analytical grounds. Many of these defects in the current system of industrial planning and control are by now well known, and the system has been under question for several years, so that its whole future is at present uncertain.

Industrial planning and controls in India, 1951-1975

Since 1951, India has attempted to direct investment into what were supposed to be "socially desirable" industries. The legal basis for such direction was provided by the Industries Act of 1951 and the Industrial Policy Resolution of 1956. The guidelines for industrial investment were laid down by the Planning Commission, which was set up in 1950 and has since then produced five five-year plans.

The plans

The first plan (1951/52-1955/56) contained relatively few industrial targets. Its industrial programme consisted largely of projects that were being implemented or due to begin. About one third of total industrial investment was to take the form of assistance to private agencies, while most of the remainder was to be devoted to public-sector industrial projects already begun. In the private sector, the main emphasis was placed on increasing the output of existing industries to their installed capacities rather than on creating new capacity.[28] There was thus nothing behind the industrial targets laid down in the first plan besides rough projections.

The second five-year plan (1956/57-1960/61) for the first time contained an analytical framework—the two- and subsequently four-sector model of Mahalanobis,[29] which was identical in its analytical structure to the model of the Soviet

*Deepak Lal, University College London.

[28] A. H. Hanson, *The Process of Planning* (London, Oxford University Press), p. 96.

[29] P. C. Mahalanobis, "Some observations on the process of growth in national income", *Sankhya*, September 1953 and "The approach of operational research to planning in India", *Sankhya*, December 1955.

economist Feldman.[30] It provided the rationale for a heavy-industry-biased; import-substitution programme of industrialization. Logically this model is valid only for a closed economy in which the Government has complete control over the consumption-savings balance in the economy.[31] Subsequently it was argued that this model of development was appropriate for India, as a country suffering from a strict foreign-exchange bottle-neck (which makes its development problems analogous to those of closed economy), owing to the stagnant world demand for Indian exports. The inefficiency and hence irrationality of Mahalanobis's investment allocations between the four sectors he considered (capital goods, factory production of consumer goods, household production of consumer goods including agriculture, and the services sector) was soon shown by Komiya (1959).

With the third plan (1961/62-1965/66) the foreign-exchange bottle-neck became an explicit assumption, "but the choices about the *magnitude* of investment in heavy industry as also the *pattern* of such investments and others were still to be without reference to notions of economic calculus".[32] The targets, as in the second plan, were set in physical terms.

With the fourth plan (1969/70-1973/74) the Planning Commission did publish the basis for its physical target setting in an attempt to provide internal consistency. This process is best described in the words of its chief architect, the late Pitamber Pant of the Planning Commission:

> "The elaboration of a detailed and internally consistent programme corresponding to a given set of overall objectives regarding income, investment, savings, foreign trade and payments, involves first the preparation of a balance of aggregate income and expenditure and their disposition between different categories of final demand. The commodity composition of each category of final demand has then to be estimated. This together with the structure of input requirements for different sectors provides the basis for estimating the internally consistent total requirements of final and intermediate goods. At this stage, it is essential to take into account the overall constraints on imports and directions and degree of import substitution which is technically possible and economically justified. The required increase in domestic output and capacity for various branches provides the basis for estimating investment needs. The total investment needs so derived must be consistent with the aggregate investment implied in the macro-economic projections. The total investment in its turn must balance with the projected savings and foreign aid."[33]

This type of planning reached its formal culmination in target setting for the draft fifth five-year plan (1974/75-1978/79). The targets were arrived at within a 66-sector input-output model of the open static Leontief variety. Its purpose was, in the light of the overall growth rate target set by the Government, to ensure consistency among the output levels of different sections in the terminal year. To arrive at terminal-year investment levels, a macro-economic growth model was used.

---

[30] E. D. Domar, "A Soviet model of economic growth", In his *Essays in the Theory of Economic Growth* (London, Oxford University Press, 1957).

[31] For a lucid critique, see M. Bronfrenbrenner, "A simplified Mahalanobis development model", *Economic Development and Cultural Change*, vol. 8, 1960.

[32] J. N. Bhagwati and P. Desai, *India–Planning for Industrialization* (London, Oxford University Press, 1970).

[33] Perspective Planning Division, 1966.

To estimate consumption, a special model was developed that linked the redistribution of consumption among different sections of the population directly with the interindustry model. Imports were estimated endogenously by constructing the appropriate import coefficient matrices.

While this brief outline of the analytical basis of Indian planning during the last two decades may suggest that target setting has become more "scientific", the real position is quite different. The latest "plan frame" (draft fifth plan) provides no more than an outline for testing the consistency of the interindustry targets within what has been labelled a "projection" model.[34] However, interindustrial consistency is perhaps the minimal virtue one requires of a plan; more important are the issues of feasibility and optimality.

The targets for industries of key importance are based on the reports of working groups that the Planning Commission sets up at an early stage of plan formulation. Each working group has about 10-15 members drawn from the ministries and other central government agencies concerned, and from the Planning Commission itself. In carrying out their functions, they have been instructed to treat physical requirements as the limiting factor rather than financial resources. Nevertheless, each group estimates the costs, including that of foreign exchange, of the projects it suggests for inclusion in the plan. It also estimates requirements for extra technical personnel.

The working groups dealing with fuel, fertilizers, machinery and steel (Heavy Industry Division) operate under the guidance of the Steering Committee for Industry, Transport, and Power. This Committee formulates tentative targets, which are submitted to the groups, as a guide in establishing provisional requirements for investment, foreign exchange and ancillary services. Preliminary proposals are also made regarding the balance of production increments as between new enterprises and expanded existing ones.

After completing their studies, these working groups report to the Steering Committee, which indicates to them the financial resources likely to be available and how the resources should be allocated to the various sectors. The industrial working groups then revise their original proposals to take account of financial limitations.

Industries not regarded as of key importance are dealt with by the Ministry of Commerce and Industry and the Planning Commission itself The Ministry consults the 19 or 20 Industrial Development Councils, each of which is composed of employers, trade unionists, technicians, government officials, and Planning Commission personnel. In theory, these formulate the development plans for their various industries, which are then scrutinized by the Ministry before they go to the Planning Commission for final processing. In practice, targets for the "organized private sector" are formulated by the powerful and well-staffed Development Wing of the Ministry of Commerce and Industry, which maintains close contact with employers and their associations. Although the Development Wing and the Planning Commission work together, some friction exists between the two organizations. Industries having no development councils are subject to schemes drafted by the Development Wing, in informal consultation with the Committee of the Federation of Indian Chambers of Commerce and Industry.[35]

In addition to the conflicting interdepartmental pressures arising from this process of investment planning, other pressures arise because India is a federal polity. In the area of industrial planning these pressures manifest themselves essentially

[34] See A. Rudra, *Indian Plan Models* (Bombay, Allied, 1975).

[35] Hanson, *op. cit.*

through attempts to influence the location of both public- and private-sector plants. One of the objectives of Indian planning is the regional dispersal of industry, and the industrial licensing system as well as public-sector industrial location have been subject to political pressures exercised by the states, the most notable being periodic agitation to force the Government to locate steel plants within a particular state.

Private sector

The Industries Development and Regulation Act of 1951 and the Industrial Policy Resolution of 1956 laid down the basic principles of industrial policy in India. The Act of 1951 provided that all private enterprises required a licence to *(a)* set up a new unit; *(b)* to expand substantially an existing unit; and *(c)* to change the product mix of an existing unit. Thus, since the passage of this Act, the Government has sought to regulate the pattern of investment in virtually the whole of the large-scale industrial sector through licensing. The Resolution of 1956 demarcated the spheres in which industries were to be solely developed by the State, those to be progressively State-owned, and those to be left solely for private enterprise to exploit. Private enterprise was expected to supplement State effort.

The objectives of industrial licensing are *(a)* to enforce the planned investment pattern; *(b)* to counteract trends towards monopoly and the concentration of wealth; *(c)* to maintain regional balance in locating industries; *(d)* to protect the interests of small producers and encourage the entry of new entrepreneurs; and *(e)* to foster improvement in industry by ensuring the optimum scale of plants and the adoption of advanced technology.

To subserve these multiple objectives, an application for an industrial licence is first scrutinized by various official agencies, which comment on points such as foreign-exchange requirements for capital goods and maintenance, foreign collaboration envisaged, connections with large business groups, proposed capital structure and sources of finance, technical feasibility of the project as assessed by the Director General of Technical Development (DGTK) and other technical authorities and the impact on the small-scale sector (as assessed by the Development Commissioner for Small-Scale Industries).

The applications approved by the departments, with their comments, are placed before a Licensing Committee consisting of officials from the Ministry of Industry, the Planning Commission and the state governments. Applications not approved are placed before a Rejection Committee (composed similarly to the Licensing Committee). The recommendations of the Licensing Committee and the Rejection Committee are then placed for final decision before the Ministry of Industry.

At the end of the process, the entrepreneur receives either a licence, a rejection letter, or (more recently) a letter of intent. The latter contains an official commitment to issue an industrial licence if certain conditions are fulfilled.

If the prospective producer requires imports of capital goods or maintenance inputs, he has to run the gauntlet of the trade-control system. For imported capital goods, licences are issued after clearance by an interdepartmental Capital Goods and Heavy Electrical Projects Committee. One of the important tasks of this committee is to persuade producers to use less attractive sources of foreign credit, and thus try to bring the supply and demand for different categories of tied credits into balance. As with licences for maintenance imports, an important adjunct of the import licensing procedures is the "indigenous availability" clearance provided by DGTD, the purpose of which is to prohibit imports of goods that can be obtained domestically.

Various attempts have been made to liberalize and simplify these procedures following the criticisms of the inefficiencies and delays associated with them that have been made by several official committees. Since 1966, the industrial licensing system has gradually been loosened. For "core" industries, which are those requiring investments of over Rs 50 million, licensing is required. Non-core industries, those with investments between 10 and 50 million rupees, also require licences, but these are given liberally, while no licences are required for the remaining industries. However, even in these delicensed industries, import controls continue for both capital and maintenance goods, and the "indigenous availability" criterion continues to be applied.

Concomitant with this delicensing, an attempt was made to reduce the concentration of economic power by restricting investment by the large industrial enterprises to the "core" sector and by applying to them a newly formulated monopolies-and-restrictive-practices act (which in effect means an extra hurdle to be crossed in making investments for these enterprises). Moreover, since the fourth plan, fixed targets have been laid down only for the core industries. For the remaining industries the plan projections are merely indicative.

The simplification of procedures to reduce delays culminated in the setting up of a Project Approvals Board in November 1973 in the Ministry of Industrial Development.

More recently, there has been a further liberalization of licensing procedures, whose net effect is greatly to reduce the area of industry where licensing is still an obstacle to setting up, expanding or diversifying industrial capacity. However, the recent commitment of the Janata party to promote small-scale industries, and its demarcation of industries that are suitable for the newly defined "small", "cottage" or "tiny" sectors, has introduced additional possibilities for bureaucratic interference.

Various criteria have been used by the licensing authorities in issuing licences. For the industries for which targets are laid down in the plan, the targets form the initial basis for the licensing capacities. However, the Government has never issued specific guidelines to enable potential applicants to understand the criteria adopted in approving applications. The use of licensing lists of industries falling into the categories of banned, free and merit industries has provided some guidance to potential applicants. These lists are prepared every six months by a committee of officials. Industries on the banned list are those for which it is considered that adequate capacity has been licensed, and applications are rejected without reference to the Licensing Committee; on the merit list are those applications that were considered of merit; and the residual are on the free list.

But the plans did not lay down targets for all industries. For those for which no targets were laid down, the Licensing Committee took account of the estimated demand for the product, the goal of achieving balanced regional development, possibility of exports, avoidance of monopoly and other basic principles set forth in the Industrial Policy Resolution of 1956.

Much worse, no criteria were laid down for deciding the allocation of investment among different firms within an industrial sector even when there were explicit targets laid down in the plan for the sector.

In practice, the rule followed in issuing licences within industry was a chronological selection based on "first come first served", and as there was no follow-up of licences, this procedure led to a pre-emption of targeted capacity by a

few producers who often had no intention of establishing the capacity, leading to an underutilization of licences and shortfalls between established and planned capacity in many industries. Consequently, the authorities tended to issue licences in many industries beyond planned targets, thus making it impossible to legislate the planned pattern of investment with precision.

Public sector

With successive plans, the share of the public sector in total industrial investment has been rising at the expense of private-sector investment. From about 25 per cent of total large-scale industrial investment in the first plan, the public sector raised its share to roughly 50 per cent by the end of the third plan. The Draft Fifth Plan envisages that nearly 62 per cent of the total projected industrial investment of about Rs 135 billion will be in the public sector. It is of some importance therefore to outline the procedures followed in making public-sector investment.

Although industrial licensing does not apply to the public sector, imports of capital or maintenance goods for this sector are subject to regulation as they are for the private sector. Moreover, the import licensing procedures public-sector enterprises must follow are more cumbersome than those laid down for private enterprises.

The plan lays down targets for expanding capacity for the major industries in the public sector. However, in some cases the public-sector enterprises themselves suggest new capacities not listed in the plan. Such proposals are sent to the relevant ministries and the Planning Commission for comments. The comments and recommendations are collated and assessed by various financial advisers in the Finance Ministry, who have also to assess the financial viability of the projects. Till recently the criteria used and the procedures followed for sanctioning public-sector projects were fairly *ad hoc*, the main criteria used being a crudely estimated financial rate of return and the physical capacity targets laid down in the plan. But decision making was particularly subject to political pressures, especially from the state governments, some of which came to identify the hallmark of their success as obtaining a public-sector steel plant in their state.

Since November 1972, a different procedure has been followed for making public-sector investment decisions. The public-sector enterprises still formulate the projects, mainly in line with plan targets. These proposals, however, are appraised by a Project Appraisal Division (PAD) in the Planning Commission. Its recommendations, together with those of various departments on all investment projects over Rs 10 million, are sent to the Public Investment Board (PIB), a high-level committee, whose chairman is the Expenditure Secretary, Ministry of Finance, and members are the Secretary, Department of Economic Affairs (Ministry of Finance); Secretary, Ministry of Industries; Secretary, Planning Commission; Secretary to the Prime Minister; and the Director of the Bureau of Public Enterprises in the Ministry of Finance. The composition of this committee reflects the various considerations relating to public expenditure, foreign-exchange supply, plan targets, and political factors that are taken into account in its deliberations. All projects above Rs 50 million, if recommended by PIB, require further cabinet approval.

The only explicitly economic appraisal now done is that by PAD. It normally takes plan targets for granted and makes some adjustments for taxes and subsidies

and uses rough estimates of world prices for valuing trading inputs to derive the economic rate of return of the project. It is currently attempting to lay down a consistent methodology for its appraisal that is essentially a variant of the Little-Mirrlees (1974) procedures. In this context, a preliminary note on appraisal procedures, and estimates of shadow prices on Little-Mirrlees lines were prepared during 1974 in PAD. The current thinking in PAD is not to attempt to question plan targets, but to present economic rates of return for projects in the plan to those setting plan targets, so that these may be reappraised in the light of the economic rates of return worked out by PAD.

Determinants of the pattern of investment

As noted earlier, setting the plan targets was supposed to determine the desired pattern of industrial investment. However, target setting was based at best on a consistency type of physical planning exercise, with some attempt (via the working group exercises) also to ensure that the targets were feasible given the desired growth rate of the economy, which was politically determined. Thus, it could not be claimed that the resulting targets were economically the best.

However, even the desired pattern of investment was not in fact implemented, despite the use of a plethora of controls. Thus, in the first three plans (as in the fourth), there were large variations in planned and realized capacities. In the acids and fertilizers industries, licensed capacity vastly exceeded created capacity, while the opposite appears to have been the case in the alkalis and allied chemicals industries. In steel castings, forging and pipes, actual capacity installed (and output) fell significantly short of targets. In caustic soda and soda ash, the opposite occurred. This situation did not change markedly in the period of the fifth plan. Table 6 lists production and capacity targets and the realized production and capacities at the end of the fourth plan together with the targets laid down for the fifth plan. It shows that in many of the core industries (heavy industry and metals) the shortfalls between achievements and targets have been the greatest.

Table 6 also shows that for many industries (following the practice begun with the fourth plan) no specific targets were laid down. It did not, however, mean that these industries were free of the network of controls that regulated industrial investment and production decisions in India. For as noted above, the Licensing Committee still regulated these investments, but in terms of vague criteria.

However, by restricting licensing to units above a certain minimum size, the authorities placed an implicit tax on the larger units and thereby relinquished control over the investment decisions of smaller units, except through fiscal and monetary measures. This in itself would mean a marked dilution of efforts to enforce the planned pattern of investment.

In the absence of criteria for choosing from among several investment proposals, the relative private profitability of alternative investments established the pattern of private-sector investment.

With the virtual cessation of planning, following upon the failure to finalize the Draft Fifth Plan, as well as the general loosening of the licensing system, this tendency has been accentuated, though with the announcement of the new industrial policy (1977) by the Janata Party, which demarcates industries that are to be

TABLE 6. PLAN ACHIEVEMENTS AND TARGETS OF CAPACITY AND PRODUCTION–SELECTED INDUSTRIES

Industry	Unit	1965/66 production	1968/69 production	1973/74 Target Capacity	1973/74 Target Production	1973/74 Estimated Capacity	1973/74 Estimated Production	1978/79 Target Capacity	1978/79 Target Production
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Iron and steel									
Steel ingots	Million tons	6.53	6.5	12.0	10.8	10.6	7.14	15.15	12.77
Finished steel	Million tons	4.51	4.7	9.0	8.1	8.1	5.44	11.7	9.4
Pig iron for sale	Million tons	1.2	1.3	4.2	3.8	1.65	1.8	1.28	2.5
Alloy and special steel	Thousand tons	40	43	250	220	450	400	900	752
2. Non-ferrous metals									
Aluminium	Thousand tons	62.1	125.3	230	220	195	190	400	370
Copper	Thousand tons	9.4	9.4	47.5	31	57	18	57	45
Nickel	Thousand tons	...	...	...	...	...	...	4.8	1.5
Zinc	Thousand tons	...	26.3	76	70	38	28	165	100
Lead	Thousand tons	...	1.9	...	...	...	3	41	20
3. Industrial machinery									
Chemical plant and pharmaceutical equipment (including heavy fabricated machinery)	Rs million	74	133	600	515	762	300	1 150	800
Printing machinery	Rs million	...	1	100	80	25	15	160	110
Rubber machinery	Rs million	1.4	1.7	150	120	122	50	250	180[a]
Paper and pulp machinery	Rs million	16.8	27	150	135	130	100	450	360[a]
Machine tools	Rs million	294	247	760	650	950	650	1 600	1 370
Heavy metallurgical machinery	Thousand tons	11	25	[b]	75	90	30	120	75
Coal and other mining machinery	Rs million	30.6	48	[b]	130	290	120	350	240
Cotton textile machinery	Rs million	216	138	[b]	450	500	350	800	560
Cement machinery	Rs million	49	81.8	[b]	190	260	50	400	280[a]
Sugar machinery	Rs million	77	118	[b]	210	230	200	450	400[a]
4. Shipbuilding	Thousand GRT	28.3	18.7		53	100	46	475	475
5. Agricultural tractors	Thousands	6.3	15	68	50	47	40	125	80

TABLE 6 *(continued)*

Industry	Unit	1965/66 production	1968/69 production	1973/74 Target Capacity	1973/74 Target Production	1973/74 Estimated Capacity	1973/74 Estimated Production	1978/79 Target Capacity	1978/79 Target Production
(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
6. Power tillers	Thousands	...	0.5	35	25	36	2	36	20
7. Crawler tractors	Number	...	...	*b*	1 200	340	325	600	490
8. Dumpers and scrappers	Number	...	...	*b*	500	520	320	650	590
9. Steel castings	Thousand tons	57	50.4	*b*	225	160	80	250	230
10. Steel forgings	Thousand tons	68	44.5	*b*	220	200	86	300	240
11. Welding electrodes	Million metres	200	182	*b*	*b*	*b*	400	...	550
12. Ball and roller bearings	Millions	8.3	12.7	*b*	20	23.45	22.5	45	43
13. Automobile and ancillary industries									
Commercial vehicles	Thousands	35.3	35.6	*b*	85	73.4	48	140	110
Passenger cars	Thousands	24.79	37.3	*b*	*b*	47.4	42	65	60
Motor cycles, scooters and mopeds	Thousands	40.7	85.6	*b*	210	200	184	700	570
Auto ancillaries	Rs million	497	842	*b*	*b*	2 000	1 700	8 200	7 400
14. Road rollers	Number	1 116	198	*b*	*b*	1 900	900	2 500	1 790
15. Railway rolling stock and components									
Diesel locomotives	Number	39	87		204		184		211
Electric locomotives	Number	32	48		70		65		152
Railway coaches	Number	1 401	1 275		1 450		1 450		1 700
Railway wagons (in terms of 4-wheelers)	Thousands	33.5	16.48		17	30.8	13	45	40
16. Heavy electrical equipment									
Turbines (hydro)	Million kW	–	0.1	*b*	1.65	1.4	0.53	1.7	1.4
Turbines (thermal)	Million kW	–	0.4	*b*	1.3	2.7	1.7	2.9	2.2
Power boilers	Million kW	–	0.4	*b*	1.3		1.1	3.5	2.5
17. Electric transformers									
Above 33 kV	Million kVA	1.2	3.5	*b*	6.4	18.38	12.5	30	20
22 kV and below	Million kVA	4.46	4.8	*b*	3.5				

18.	Electric motors									
	Above 200 hp	Million hp	0.5	0.5	*b*	0.68	5.45	3.6	6.5	5.8
	200 hp and below		1.75	2.13	*b*	2.72				
19.	Electric cables and wires									
	ACSR and AA conductors	Thousand tons	40.6	62.5	*b*	125	104	85	200	170
	PVC and VIR cables	Million metres			*b*	*b*	900	600	1 250	900
20.	Electric fans (organized sector)	Thousand	1 358	1 481	*b*	3 000	3 000	2 625	4 400	4 000
21.	Electric lamps									
	GLS and others	Millions	72.14	96.85	*b*	*b*		125	200	190
	Fluorescent						13.4	12.8	18	17
22.	Dry batteries	Millions	283	436	*b*	600	1 162	670	1 700	1 300
23.	Storage batteries (organized sector)	Thousands	708	940	*b*	1 800	1 300	1 100	2 000	1 600
24.	Fertilizers									
	Nitrogen (in terms of N)	Thousand tons	232	541	3 000	2 500	2 284	1 162	6 000	4 000
	Phosphatic (in terms of P_2O_5)		123	210	1 200	900	560	350	1 715	1 250
25.	Caustic soda	Thousand tons	218	304	*b*	500	518	450	1 000	785
26.	Soda ash	Thousand tons	331	405	*b*	550	618	500	1 100	880
27.	Sulphuric acid	Thousand tons	662	1 038	*b*	2 500	2 225	1 400	4 000	3 200
28.	Industrial gas (oxygen)	Million m^3	29	34.4	*b*	50	85	62	165	110
29.	Thermoplastic resins	Million m^3					130.5	128	325	280
30.	Synthetic rubber	Thousand tons	14.3	26	70	70	30	30	55	48
31.	DMT	Thousand tons	...	...	23	20	24	10	57	50
32.	Caprolactam	Thousand tons	...	...	23	23	20		20	20
33.	Methanol	Thousand tons	...	14.9			30	25		60
34.	Pesticides (basic chemicals)	Thousand tons	13	19	69	85	50	30	90	70
	BHC			18.2			23.8	18	30	25
	DDT			3.0			4.2	3.8	9.2	8
35.	Petroleum									
	Oil exploration and production of crude	Million tons	3.02	6.06	...	8.5	...	7.7	...	12
	Refinery products including lubricants[c]		9.4	15.4	28	26	24	21.5	39	34.6
36.	Newsprint	Thousand tons	30.3	31	165	150	75	43	205	151

TABLE 6 *(continued)*

Industry	*Unit*	*1965/66 production*	*1968/69 production*	*1973/74*				*1978/79*	
				Target		*Estimated*		*Target*	
				Capacity	*Production*	*Capacity*	*Production*	*Capacity*	*Production*
(0)	*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7)*	*(8)*	*(9)*
37. Paper and paper board	Thousand tons	558	646.6	[b]	850	1 025	830	1 400	1 200
38. Automobile tires	Millions	2.31	3.75	[b]	6	5.2	5.2	11	10
39. Bicycle tires (organized sector)	Millions	18.46	24.57	[b]	35	31.3	25	35	30
40. Rubber footwear	Million pairs	52.7	55.8	[b]		52.0	43	70	60
41. Cement	Million tons	10.8	12.2	[b]	18	19.76	16	29	25
42. Refractories	Thousand tons	695	629	[b]	1 250	1 311	830	2 000	1 600
43. Iron ore	Million tons	24.5	28.1	[b]	51.4	...	37	...	58
44. Coal (including coking coal)	Million tons	67.74	71.41	[b]	93.5	...	79	...	135
of which coking coal	Million tons	16.96	17.1	[b]	25.4	...	17	...	32
45. Lignite	Million tons	2.56	3.98	[b]		...	3.4	...	6.0
46. Cotton textiles									
Cotton yarn	Million kg	907	959	[b]	1 150	...	1 000	...	1 270
Cotton cloth (mill sector)	Million metres	4 401	4 297	[b]	5 100	...	4 200	...	5 200
47. Art silk fabrics	Million metres	870	1 090	[b]	1 500	...	1 500	...	2 000
48. Rayon filament	Thousand tons	36.2	37.5	[b]	64	42	42	55	50
Rayon staple fibre	Thousand tons	38	60	[b]	90	82	80	145	130
Rayon tire cord	Thousand tons	10	13.5	[b]		19	17.5	25	23
49. Synthetic fibres									
Nylon filament and staple fibre	Thousand tons					17.12	16.2	19	19
Nylon tire cord and other industrial yarn	Thousand tons	1.5	6.5	[b]	29	2.4	2.4	10	9
Polyester filament and staple fibre	Thousand tons	1.4	4.8	[b]	22	25.5	20.0	59	43
Acrylic fibre	Thousand tons	...	...		...	...		16	14

50.	Jute manufactures	Thousand tons	1 399.3	1 088.5	*b*	1 400	1 300	1 220		1 500
51.	Woollen fabrics	Million metres	9.2	12.6	*b*	20		17		27
52.	Bicycles (organized sector)	Thousands	1 574	1 990	*b*	3 200	4 030	2 630	4 030	3 500
53.	Sewing machines (organized sector)	Thousands	430	427	*b*	600	537	415	730	670
54.	Drugs and pharmaceuticals	Rs million	1 500	2 000	*b*	2 500		3 000		5 000
55.	Glass	Thousand tons	296	250	*b*	450	345	340	673	520
56.	Soap (organized sector)	Thousand tons	163	219	*b*	250	225	300	340	340
57.	Synthetic detergents	Thousand tons	8.4	17	*b*	*b*	108	85	350	300
58.	Leather footwear (organized sector)	Million pairs	16	21	*b*	25	23	16		21.5
59.	Paints and varnishes	Thousand tons	68	65	*b*	140	118	70	250	108
60.	Typewriters	Thousand tons	39.6	46.9	*b*	*b*		45		81
61.	Sugar	Million tons	3.54	3.56	*b*	4.7	4.3	4.3	6.0	5.7
62.	Vanaspati	Thousand tons	401	466	*b*	625	1 250	575	1 250	740
63.	Electronics	Rs million	43	106				2 570		7 360
	Consumer electronics							760		1 330
	Medical electronics									180
	Instruments									510
	Computer and calculators							390		600
	Control and industrial electronics									260
	Components							540		1 820
	Materials							100		320
	General facilities									30
	Telemetry and two-way communications									170
	Civil navigation									40
	Mass communications							Included in consumer		190
	Telecommunications							730		1 910
	Others							50		

Source: Draft Fifth Five-Year Plan, vol. II, annex III to the Industries chapter, pp. 156-159.

[a] Excluding standard bought out items.

[b] Specific target had not been fixed.

[c] Capacity is in terms of crude throughput.

promoted as small-scale industries, further bureaucratic licensing to achieve this objective can be expected in the future. Even with a perfectly functioning system, however, industrial licensing, which is essentially a negative instrument for channelling investment, cannot create investment demand. Investment depends upon the relative private profitabilities of different industries.

The two major public policy instruments that determined this relative profitability were the trade control system and the various price and distributional controls on a number of commodities.

Since 1956/57, widespread use has been made of quantitative import restrictions for managing the balance of payments, which, together with import licensing on the basis of an overvalued exchange rate, has led to a wide range of effective protective rates (see table 7). These differing rates of protection have determined the actual pattern of investment. Since imports of capital and intermediate goods were permitted while the import of consumer goods was banned, the result was, on balance, higher effective protective rates and hence incentives to invest in the indigenous consumer goods industries, and thus actual investment at odds with the planned pattern based on promoting heavy industry.

Moreover, many of the goods where investment was considered to be a priority were also those on which price and distributional controls were imposed. These included steel, paper and cement. Since 1965, a policy of partial decontrol has been followed for some of these core industries, since the net effect of these controls is to reduce their relative profitability and hence to create a disincentive to invest.

The resulting private profitabilities bore little relationship to social profitabilities. Table 7 gives private and social rates of return in some Indian industries for 1968. The social returns are derived on Little-Mirrlees (1974) lines and are shown for alternative estimates of the shadow wage rate. It is apparent that there are wide divergences between social and private profitabilities, and that the effective protective rates that have largely determined private profitability are by no means designed to lead to a correction of these divergences.

Also, the practice of chronological selection of intra-industry investments entailed a bunching of licences at the start of each plan, which implied that investments were not phased over the life of each plan. A strain was thus put on scarce resources in the earlier years of the plan; and the actual phasing was not based on economic criteria, but was the result of decisions determined by short-run considerations, such as the availability of foreign exchange in particular years.

Finally, maintenance imports (for producing current output) were licensed on the principle of "fair" or "historic" shares and the installed capacity of the producer. This led to a freezing of the relative outputs and market shares of industries and firms. It also led to the establishment of excess capacity, as current output depended on import allocations, which were based on a percentage of installed capacity.

In conclusion, therefore, neither the desired nor the actual pattern of industrial investment in India can be said to have conformed to any sensible economic or technical criteria. Thus, it cannot be presumed that industrial planning succeeded in improving the social efficiency of industrial investment over what would have occurred as a result of purely market forces, in fact, the converse may well have been the case. Many of the objectives industrial planning was to further were vague and inconsistent. Given the federal and democratic polity within which planning had to be conducted, numerous conflicting pressures were constantly being applied to dilute further the avowed purpose of planning. Not surprisingly, by the end of 1975,

TABLE 7. SOCIAL AND PRIVATE RATES OF RETURN IN INDIAN INDUSTRIES (1968)

(SWR: shadow wage rate; W: market wage rate)

		Social rates of return (percentage)			*Private rate of return (percentage)*	*Value of capital at world prices (percentage)*	*Effective protective rate (percentage)*
		SWR = 0.6 W	*SWR = W*	*SWR = 0*			
(0)		*(1)*	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
1.	Printing and publishing (28)	97.25	62.80	148.93	17.71	39.30	−21.0
2.	Wine (212)	58.68	35.85	93.39	63.49	1.06	81.6
3.	Non-metal mineral products n.e.c. (339)	49.92	28.28	64.85	16.25	19.68	1.2
4.	Tobacco manufactures (220)	49.82	33.59	74.17	66.38	32.72	113.5
5.	Knitting mills (232)	32.86	16.23	57.79	17.88	1.54	26.6
6.	Soft drinks and carbonated water (214)	32.07	22.54	46.37	33.91	3.86	81.6
7.	Non-ferrous metals (342)	24.91	17.54	35.97	17.52	71.44	37.9
8.	Breweries and malt manufacturers (213)	22.09	17.18	29.34	23.21	5.18	81.6
9.	Miscellaneous chemicals (319)	21.62	9.46	39.84	28.60	141.33	104.1
10.	Leather products (except footwear) (293)	20.00	4.55	45.45	35.89	0.22	120.0
11.	Cork and wood products n.e.c. (259)	19.44	− 0.70	49.29	21.73	1.42	80.0
12.	Paints and varnishes (313)	19.10	3.95	41.93	35.45	9.11	141.0
13.	Glass and glass products (332)	18.47	− 1.79	48.80	12.17	16.25	47.7
14.	Textiles n.e.c. (239)	18.22	1.41	43.43	29.62	14.85	118.1
15.	Saw mills (251)	17.46	4.28	37.22	11.36	9.59	43.1
16.	Rubber products (300)	16.95	− 3.79	48.04	35.65	45.33	140.0
17.	Motor cycles and bicycles (385)	16.68	0.87	40.41	14.36	24.20	61.2
18.	Cement (hydraulic) (334)	16.43	9.55	26.76	11.98	84.62	43.8
19.	Wooden and cane containers n.e.c. (252)	14.62	− 23.08	73.07	19.14	0.26	80.0
20.	Miscellaneous food preparations (209)	14.31	4.35	29.26	13.12	128.16	65.2
21.	Distilling, rectifying and blending (211)	12.79	4.09	26.02	14.19	5.38	81.6
22.	Motor vehicles manufacture (383)	12.16	1.87	27.59	10.50	151.69	61.2
23.	Furniture and fixtures (260)	10.15	− 9.66	39.90	14.48	10.35	89.3
24.	Structural clay products (331)	10.06	− 8.07	37.31	8.65	17.85	62.5
25.	Footwear (241)	9.56	− 16.81	49.55	25.06	2.26	124.0
26.	Shipbuilding and repairing (381)	6.42	− 16.64	40.97	4.70	16.23	61.2
27.	Machinery except electricals (360)	5.75	− 5.33	22.37	8.06	259.22	87.8
28.	Tanneries (291)	5.35	− 6.05	22.39	12.72	8.26	127.6
29.	Grain milling products (205)	4.70	− 5.04	19.26	13.06	13.29	146.7

TABLE 7 *(continued)*

		Social rates of return (percentage)			Private rate of return (percentage)	Value of capital at world prices (percentage)	Effective protective rate (percentage)
		SWR = 0.6 W	SWR = W	SWR = 0			
(0)		(1)	(2)	(3)	(4)	(5)	(6)
30.	Railroad equipment (382)	4.48	– 20.97	42.63	2.82	97.76	61.2
31.	Canning and preserving fish and seef od (204)	2.93	– 4.72	14.62	11.90	2.12	179.8
32.	Sugar and gur (207)	2.54	– 4.14	12.55	14.24	174.96	235.1
33.	Electrical machinery (370)	2.54	– 7.17	17.10	7.50	258.11	119.6
34.	Aircraft (386)	2.54	– 18.42	33.91	1.32	13.95	61.2
35.	Paper and paper products (271)	2.52	– 5.03	13.84	10.48	103.42	171.3
36.	Pottery, china and earthenware (333)	2.43	– 12.99	20.05	6.85	14.01	125.9
37.	Spinning, weaving (231)	2.11	– 20.50	36.03	10.34	582.01	107.8
38.	Petroleum refineries (321)	1.82	– 1.39	6.64	19.19	95.52	535.1
39.	Miscellaneous products of petroleum and coal (329)	– 0.79	– 3.14	2.70	1.16	41.38	192.2
40.	Iron and steel (341)	– 1.72	– 7.51	6.98	1.74	866.91	151.9
41.	Dairy products (202)	– 2.20	– 9.93	9.33	21.74	16.71	521.8
42.	Vegetable and animal oils and fats (312)	– 2.51	– 8.50	6.40	0.31	7.18	139.5
43.	Basic industrial chemicals (311)	– 2.53	– 7.66	5.16	9.11	366.93	461.8
44.	Cocoa, chocolate and sugar confectionery (208)	– 6.00	– 23.00	9.00	20.22	1.00	644.1
45.	Wearing apparel (243)	– 8.30	– 28.36	21.79	11.57	3.35	225.0
46.	Canning, preserving of fruits and vegetables (203)	– 8.40	– 15.44	2.39	– 6.11	4.60	179.8
47.	Transport equipment (389)	– 9.90	– 27.74	12.37	– 9.30	0.97	61.2
48.	Metal products except machinery and transportation equipment (350)	– 10.28	– 36.21	27.66	0.83	64.84	133.5
49.	Baking products (206)	– 13.53	– 35.94	20.16	52.42	6.15	644.1
50.	Cordage rope and twine (233)	– 14.04	– 29.79	9.21	19.52	1.41	705.2
	Weighted average	5.4	– 6.1	22.6	10.00		

Source: D. Lal, "Private and social rates of return in Indian manufacturing", *Economic and Political Weekly*, 27 December 1975.

Notes: The estimates in columns (1) to (5) have been derived from the *Annual Survey of Industries* (ASI), 1968, Census Sector (Provisional Results), General Review, pp. 1-10, on the lines outlined in Lal (1975). Column (6) is derived from V. Panchmukhi "A quantitative analysis of trade policies in India", Department of Economics, Bombay University, Golden Jubilee Seminar on "Indian Economy–Performance and Prospects", 25-28 March 1972.

planning as a whole had been discredited and seemed to be little more than a statement of pious hopes. The network of controls that had been established, though recently loosened, has not been abolished and still continues to influence the pattern of investment in essentially *ad hoc* and arbitrary ways. Attempts were made to remove official discontent with the system, as expressed, for instance, in the reports of the Administrative Reforms Commission (ARC),[36] by mere tinkering with the administrative framework of planning, the feeling being that shortfalls in implementation and divergences between plan and practice could be overcome by improving the functioning of bureaucrats and by wishing away many of the inconsistencies in objectives and conflicting political pressures that have bedevilled Indian planning. Nevertheless, the question remains whether these failures were due to remediable defects in the planning or control system, or whether the very basis for setting industrial priorities, which underlies such attempts at industrial planning, was unsound.

"Optimal" investment planning

The deficiencies of Indian industrial planning are only partly due to administrative and other lacunae. Much of the problem is a result of the misplaced use of multisector planning models. Theoretical criticism of Indian plan models has largely been concerned with questions of formulating and estimating such models. However, the claims of the originators of these models turn out to be much more modest than what the Indian planners have attempted to do with them. In his survey of both official and academic Indian plan models, Rudra concludes that these models are "*(a)* not satisfactory aids for judging the soundness of plan targets set by less formal methods; *(b)* not satisfactory instruments for the setting of plan targets, ready to be implemented; and *(c)* do not provide a satisfactory frame for the evaluation of projects".[37]

Although some model builders and practising Indian planners seem to hope that, in time, with improved models and better data collection and processing facilities, it may become possible to derive investment plans that could be considered "optimal", given the current state of knowledge, the derivation of an "optimal" plan, which is the ultimate justification of the multisector model type of approach to planning resource allocation, is an impossible pipe-dream.

An alternative, more realistic, approach based on procedures developed largely by Little and Mirrlees is considered below.

An economy will be examined in which a fairly large public sector coexists with a predominant private sector. The government's chief instruments of control are fiscal and administrative devices (taxes, subsidies, price and distributional controls, import and investment licensing and the pattern and volume of public expenditure) whereby it can *(a)* alter the implicit or explicit terms on which goods and services are echanged, that is, alter relative prices of goods and services; and *(b)* directly determine to some extent the relative quantities of goods and services that can be produced. If an optimal plan could be derived, the tasks under *(a)* and *(b)* would be

[36] See in particular *The Machinery of Planning (ARC, March 1968).*

[37] *Op. cit.*, pp. 211-212.

achieved simultaneously, by the government's either directly legislating the appropriate relative quantities of various goods or by using taxes and subsidies to make relative prices correspond to the "dual" solution of the economy-wide model.

Lacking such an optimal plan, the goverment must decide what is a feasible and desirable distribution between present and future consumption, and hence what is a feasible and desirable medium-to-long-term rate of growth for the economy. This will require an intertemporal model (at its crudest one of the Harrod-Domar types) that charts alternative feasible time paths for the economy taking account of broad constraints such as existing technological structure, the availability of current resources of capital and labour, and likely changes in them over time. At best, an optimal growth model could be formulated, which, given various policy objectives and values of technological parameters (e.g. marginal capital/output ratios), could yield some idea of the optimal growth path of the economy. From such a model, various national parameters, which reflect both the given policy objectives and estimates of the aggregate technological and resource constraints over time, which could be of use in project evaluation, could be derived.

This long-term, or perspective, plan is then a forecast of the likely growth path of the economy, given certain choices made by the government about the desirable level of savings and investment, and hence the desired rate of growth of the economy (from among the feasible rates).

The perspective plan has to be translated into sectoral plans, which serve two purposes: *(a)* to provide forecasts of demand based on the aggregate growth rate of the economy the government considers feasible and desirable for sectoral goods and services; and *(b)* to indicate to public-sector management estimates of supplies from different sources, the areas in which, because of expected demand-supply imbalances, public-sector investment would be desirable. To make such projections, an input-output table is indispensable. Continual work on bringing input-output tables up to date is therefore a prerequisite for preparing meaningful sectoral plans. A wide variety of aggregate planning models can be used.[38] One such model (Mirrlees and Khan, forthcoming) tries to identify sectors that could be export-oriented, import substituting, and non-traded, on grounds of comparative advantage. It attempts to stimulate a solution to an economy-wide model in which the prices of traded goods are equated to border prices, while prices of non-traded goods are determined for different values of the shadow factor-price ratio (the shadow wage rate and accounting rate of interest), so that the supply of foreign exchange becomes nearly elastic. This model is obviously an application of the Little-Mirrlees project evaluation rules at the sectoral level.

Whatever model is chosen for aggregate and sectoral perspective planning, the highly tentative nature of the results should be remembered. The results may

> "... if carefully handled so as to avoid their worst failings, give some insight as to the likely desirable development of the economy on a broad sectoral basis. When it comes to filling in the sectors, they are useless."[39]

For the latter task a system of project evaluation is essential, for which a set of accounting prices is required. As these prices cannot be obtained in practice from the solution to an optimal planning model,

[38] A. Manne, "Multisector models for development planning–a survey", *Journal of Development Economics*, vol. 1, 1974.

[39] I. M. D. Little and J. A. Mirrlees, *Project Appraisal and Planning for Developing Countries* (London, Heinemann Educational Books, 1974), p. 92.

> "... one must find indirect ways of guessing the accounting prices that would hold for an optimal solution. In so doing one starts with actual prices, for the market mechanism does provide a 'solution' to the actual economy and indeed a new solution every minute. But, as we have seen, there are good reasons to believe that these solutions are not optimal. By allowing for these reasons, one can make good guesses about how to amend actual prices to approach nearer to those prices which would be likely to reign if the economy were operating in a properly efficient manner in pursuit of the objectives demanded of it."[40]

The Little-Mirrlees project evaluation rules are likely to be applicable in a wide variety of second-best general-equilibrium models that will be relevant for many developing countries.

We can now describe the process of mutual interaction between the aggregate perspective plan, the multisector medium-term (say, five-year) plan and the system of project evaluation.

Let us assume that we already have an input-output table for the economy, which, together with a long-term macro-model, has been used to develop a broad sectoral five-year plan. In this plan, we would have a whole set of production levels of different goods and services in the economy. Clearly, not much confidence can be placed on these levels as the basis for an optimal plan. However, they can be regarded as a first approximation of the planner's forecast of the likely future developments of demand and of the ensuing pattern of production and trade, given their estimates of resource availabilities and domestic production and foreign trade possibilities.

On the basis of the perspective plan, various national parameters, e.g. the accounting rate of interest, distributional weights for different contemporaneous income groups and shadow wage rates can be derived. These, together with the Little-Mirrlees shadow pricing rules, can then be used to set up a system of project evaluation for public investments (and for that part of private investment that is directly under government control, say, through some system of industrial licensing). Public-sector firms would then begin by sending up projects that would initially be in line with the "targets" laid down in the five-year plan. These would be appraised by shadow pricing the inputs and outputs, and accepted if their social net present value is positive. In the latter case the preliminary sectoral estimates (reflecting the planner's initial judgements about the social desirability of investment in the relevant sectors) embodied in the plan would be justified. If, however, it turns out that projects in a particular sector yield negative social present values, then the project would be rejected and this information (including the technological and price data) would be passed on to those responsible for drawing up the five-year plan so that they could then revise their sectoral allocations and hence the plan. In this basically iterative process, over time the planning office would be able both to obtain better micro-information for drawing up its sectoral and perspective plans, and to be relatively confident that in the actual selection of investment projects only those that were socially profitable would pass the appraisal test; hence there would be a built-in check to prevent socially undesirable investment allocations from being made as a result of the necessarily partial and incomplete information on which the initial sectoral five-year plan was based.

From the description of this "idealized" planning process, it appears that project appraisal then will play a crucial if not central role in public-sector (or in the

[40] *Ibid.*

government-controlled sector) resource allocation. In fact, it can be argued that in this system project evaluation plays the major role and is the central instrument for determining investment allocations, while the sectoral and aggregate plans provide a framework for determining the broad social objectives and the national parameters required for the project appraisal procedures. Moreover, the medium-run (five-year) plan according to this argument would need to be continually revised in the light of emerging information from project evaluation. But basically, the role of the plan would be to *(a)* chart out certain strategic objectives, like the desired (and feasible) rate of growth of the economy, and the resulting changes in employment, consumption and savings over time; and *(b)* to provide signals to project formulators of the areas (sectors) in which, on the goverment's best estimates, public- and private-sector investments would be socially profitable. However, the ultimate test of the desirability of investments would be based on explicit project appraisal.

Furthermore, the information obtained from project evaluation would also be valuable in designing other public policies. For instance, the divergences between private and social profitability would indicate the directions in which the market relative price structure should be changed by appropriate fiscal or administrative intervention, to bring it closer to the relative social price structure. Secondly, the evaluation of past and current public investments at accounting prices would provide a better measure of the performance of the public sector and could also be used as an instrument to monitor and improve public-sector performance. It could be particularly important in India, as well as in other countries where, given the wide divergences between market and social prices and the tendency to price public-sector outputs below their social calue, the current measures of profitability are a poor guide to both past and current public-sector performance. Thirdly, in its macroeconomic policies to manage the level and pattern of aggregate demand, the government very often has to vary the level of public expenditure. Thus it naturally faces the problem of deciding in what particular sectors public expenditure should be changed (raised or cut). Normally, the decision is based on some *ad hoc* rule, such as a certain percentage increase or cut in all public expenditure. This, however, is likely to be a suboptimal policy, for, given the heterogeneity of the items constituting public expenditure, to implement an aggregate cut in expenditure, particular cuts would fall on marginal sectors and projects. This implies that the government should in making its expenditure cuts, first raise the discount (i.e. interest) rate at which investment projects are accepted, and all projects that were previously socially profitable at the old (and lower) discount rate and are unprofitable at the higher one should be discontinued or postponed. Clearly, the rise in the discount rate would have been correctly estimated when the sum of the expenditure on the marginal projects rejected at the higher discount rate is equal to the desired aggregate expenditure cut. Thus, the required rise in the discount rate can be iteratively determined and the socially desirable pattern of expenditure cuts corresponding to the desired aggregate cut in public expenditure will be determined.

Not all of these problems can be solved in practice within the aggregate planning type of approach supplemented by some *ad hoc* project appraisal used in India (and many other developing countries). Thus, our general conclusion is that, if there is to be a "grand design" of investment planning, it may be better to use a grand design based on the project approach supplemented by judicious use of planning models rather than to use a grand design based primarily on planning models in which quantitative sectoral targets are laid down and project appraisal is limited to minor

choices of location and technique in a cost-effectiveness type of framework. The essential argument for preferring the project to the programming approach, as spelt out in this part, is that while in principle quantities and prices are simultaneously determined in an optimal plan, in practice, because of severe informational and computational constraints, such an optimal plan can never be derived. Nevertheless, it is possible in many real-world situations to make a fairly good guess at the optimal prices that would obtain if a full-scale, general-equilibirum, second-best model could be estimated and solved. Starting with these shadow or accounting prices, therefore, the quantities would be determined in stages. Or, in short, we have argued for the feasibility of determining optimal prices (and hence the project approach), rather than optimal quantities (and hence the programming approach), when in the real world both these primal and dual solutions of the optimum investment and production plan cannot be simultaneously determined.

Future prospects

How likely is it that the more rational system of industrial planning discussed in the last section will be adopted? What would its adoption imply for the system of controls that has been set up and for the deployment of other instruments of government policy to ensure a better allocation of resources?

First, the institutional requirements for project-based, decentralized industrial planning already exist. The Project Appraisal Division (PAD) and the Perspective Planning Division (PPD) in the Planning Commission could be the central authorities that together would determine the non-traded accounting prices to be handed down to the government-controlled firms. Investment decisions of these firms would be based on these and expected border prices, and the criteria for judging their performance would be their social profitability at these shadow prices. The problem of estimating the effects of altering government trade and fiscal policies on some of these shadow prices would nevertheless remain. The lack of effective co-ordination of different instruments of government policy has been noted in terms of the imperfect implementation of the planned investment pattern in the past in India, with different controls pulling in contradictory directions. However, for the stability of the relevant shadow prices to be used in project appraisal, the only crucial policy that must be co-ordinated is that concerning quantitative restrictions. To the extent that tradable goods are subject to fixed import quotas, they are converted into non-traded goods. If they are subject to quotas that vary, they will be partially traded goods. Thus, certain goods could arbitrarily switch from one of the three sets of traded, partially traded and non-traded goods, depending upon the way the trade control system is operated. The desirable solution is, of course, to substitute tariffs for quantitative restrictions. This move is in any case desirable on other grounds at the present stage of Indian development, since the quantitative restrictions and the accompanying "indigenous availability" criterion used in determining whether competing goods can be imported are a major stumbling block in improving the efficiency of existing Indian industry and in promoting exports (to which the Indian Government is committed).

Thus, if the trade control system can be rationalized by substituting tariffs for quantitative restrictions, then the problems of second-best investment planning

would not force the type of "areas-of-control" problem highlighted by Sen. For, it follows from the Dasgupta-Stiglitz[41] demonstration of the case where all taxes (and distortions) are given at any arbitrary (non-optimal) levels for any or all commodities, that the Little-Mirrlees shadow pricing rules still remain the correct ones for investment decisions in the sector under government control.

There is some hope, given the current disillusionment with the traditional methods of industrial planning, that the more rational project-based investment planning may prove acceptable at least for the public sector. Given the increasing liberalization of industrial licensing and the increasing reliance on price as a means of controlling the economy, attempts to influence the pattern of private investment may also be based on sounder economic principles. Ultimately, as India's experience in the last two decades has shown, private investment can be channelled into socially profitable lines only by raising private profitability in these areas, which means making actual market prices as close to shadow prices as possible. Such an exact equivalence is unlikely to be achieved in the near future; but in determining the deployment of various fiscal and monetary instruments to influence private investment it will be necessary to see that the resulting relative private profitabilities of different industries are close to relative social profitabilities. If industrial licensing is to continue to be used to regulate private industry, then the obvious criterion for choosing between alternative proposals should be social profitability measured by social prices as in public-sector investments.

But what of industrial priorities in such a system of industrial planning? As emphasized earlier, there is no realistic basis for the centralized setting of such priorities in view of irreducible uncertainty and the problems connected with the different levels at which information is held, and the consequent difficulties for any centralized agency in obtaining the relevant information. Although there seems to be no dearth of entrepreneurial talent in India, the past performance of the planners and public-sector managers suggests that there is little reason to believe that, given the correct shadow prices, investment decisions based on centralized government forecasts will prove to be better than those based on the decentralized forecasts of many private entrepreneurs. However, to the extent that India has committed itself to a policy of promoting public-sector investment, the Government will have to make some forecasts of future demand and supply for at least the goods that the public sector is engaged in producing to provide some guidance to public-sector managers. These forecasts, however, should be treated as indicative, with both the actual public-sector investment decisions and actual performance being judged in terms of social profitability at shadow prices.

For a large country like India with a relatively highly skilled labour force and fairly diversified natural resource base, and by now a fairly diversified industrial structure, to lay down industrial priorities for the private sector would involve making forecasts for thousands of commodities. It is inconceivable that any existing methodology would enable such forecasting to be done rationally. As a result, it is much better to let the private industrial structure evolve as a result of the private entrepreneurs' own forecasts, made in an environment where the actual prices they face are increasingly close to shadow prices. The latter in turn involves a rationalization of the trade control system, the possible introduction of a wage subsidy to correct the divergence between the market and shadow wage rate, and the

[41] P. Dasgupta and J. E. Stiglitz, "Benefit-cost analysis and trade policies", *Journal of Political Economy*, January/February 1974.

substitution of value-added taxation for the extremely complicated and highly diversified system of excise taxation now existing.

Under such a system of indsutrial planning, there may still be doubts about the physical consistency of the intersectoral demands and supplies of different commodities, so much emphasized by Indian planners. These fears would be misplaced. For such consistency is only required in a closed economy. In an open economy foreign trade permits much more freedom for excess demands and supplies in different sectors to co-exist with overall external and internal balance. The only area where such consistency would still be required is for the set of non-traded goods. As most of these are provided by the public sector, centralized forecasts, and plans for these goods to ensure that supplies match future demand, still remain essential. It is an ironic comment on Indian planning, that in the one area in which public-sector investment planning in the sense of consistency remains of great importance, governments have traditionally made the grossest errors. As a result of erroneous forecasts or inefficient implementation, India in the past decade has seen a planned increase in the supply of engineers that has led to serious unemployment of engineers and power shortages that for years have crippled industrial production.

Thus, in conclusion, there are feasible ways within the existing institutional and bureaucratic setting for India to move towards a more rational system of industrial planning. The stagnation of industrial output and investment since 1965 is now increasingly being recognized to be the result, in part, of the limitations of the crude import-substitution strategy followed in the past. The intellectual basis of the old system of target setting, and the practicality of implementing a planned investment pattern through the complex system of controls is also under question. Thus, there is some hope that in the near future India may move towards the sounder form of industrial planning discussed briefly here, though the likelihood of a backlash from all those who have benefited from the rents generated from the old methods of control should not be minimized.

Bibliography

Appraising foreign investment in developing countries. *By* D. Lal *and others*. London, Heinemann, 1975.

Arrow, K. J. *and* L. Hurwicz. Decentralisation and computation in resource-allocation. *In* R. W. Pfouts, *ed.* Essays in econometrics. Chapel Hill, University of North Carolina Press, 1966.

Bhagwati, J. N. *and* S. Chakravarty. Contributions to Indian economic analysis—a survey. *American economic review* (Nashville) September 1969.

Diamond, P. A. *and* J. A. Mirrlees. Optimal taxation and public production. *American economic review* (Nashville) March 1971.

Hazari, R. K. Industrial planning and licensing policy—final report. New Delhi, Planning Commission, 1967.

Heal, G. M. The theory of economic planning. Amsterdam, North Holland Publishing, 1973.

India. Ministry of Industrial Development and Company Affairs. Estimates Committee. Industrial licensing. Ninth report. New Delhi, 1967.

_____ Ministry of Industry and Supply. Mathur Committee. Report of the study team on directorate general of technical development. New Delhi, 1965.

_____ Perspective Planning Division. Draft fourth plan: material and financial balances 1964-65, 1970-71 and 1975-76. New Delhi, 1966.

_____ Planning Commission. A technical note on the approach to the fifth five-year plan of India 1974-79. New Delhi, April 1973.

_____ Draft fifth five-year plan 1974-79. New Delhi, 1973.

Khan, A. R. The economy of Bangladesh. London, Macmillan, 1972.

Komiya, R. A note on Professor Mahalanobis' model of Indian economic planning. *Review of economics and statistics* (Amsterdam) February 1959.

Koopmans, T. C. Three essays on the state of economic science. New York, McGraw-Hill, 1957.

Lal, D. Licenses and permits–an alternative view. *Seminar* (New Delhi) June 1972.

_____ Men or machines. Geneva. International Labour Office, 1978.

_____ Methods of project analysis–a review. World Bank Staff Occasional Paper No. 16. Baltimore, Johns Hopkins, 1974.

_____ New economic policies for India. London, Fabian Society, 1973. (Fabian Research Series 311).

_____ Private and social rates of return in Indian manufacturing. *Economic and political weekly* (Bombay) December 1975.
Text in English.

_____ Project evaluation and the theory of the second best. Washington, International Bank for Reconstruction and Development, September 1973.
Mimeographed.

_____ Social prices for India. New Delhi Planning Commission, Project Appraisal Division, 1974.
Mimeographed.

_____ The foreign exchange bottleneck revisited–a geometric note. *Economic development and cultural change* (Chicago) July 1972.

Lange, O. On the economic theory of socialism. *Review of economic studies* (Edinburgh) 4:1 and 2 (October 1936/February 1937).

Lerner, A. P. The economics of control. New York, Macmillan, 1946.

Lutz, V. Central planning for the market economy. London, Longmans, 1969.

Malinvaud, E. Decentralised procedures for planning. *In* E. Malinvaud *and* M. O. L. Bacharach, *eds.* Activity analysis in the theory of growth and planning. London, Macmillan, 1967.

Mirrlees, J. A. *and* A. Khan. Optimal prices for a developing economy. London, Heinemann, forthcoming.

Mirrlees, J. A. *and* N. H. Stern. Fairly good plans. *Journal of economic theory* (New York) April 1972.

Newberry, D. M. G. Public policy in the dual economy. *Economic journal* (London) June 1972.

Paranjape, H. K. The Planning Commission. New Delhi, Indian Institute of Public Administration, 1964.

_____ The re-organized Planning Commission. New Delhi, Indian Institute of Public Administration, 1970.

Scott, M. F., J. A. MacArthur *and* D. M. G. Newberry. Project appraisal in practice. London, Heinemann, 1976.

Sen, A. K. Inter-relations between project, sector and aggregate planning. *Economic bulletin for Asia and the Far East.* 21:1/2, June/September 1970.
United Nations publication, Sales no.: 70.II.F.15.

Stern, N. H. Optimum development in a dual economy. *Review of economic studies* (Edinburgh) April 1972.

Taylor, L. Theoretical foundations and technical implications. *In* C. R. Blitzer, P. B. Clark *and* L. Taylor, *eds.* Economy-wide models and development planning. London, Oxford University Press, 1975.

Tendulkar, S. D. Planning for growth, redistribution and self-reliance in the fifth five year plan. *Economic and political weekly* (Bombay) January 1974.
Text in English.

09165

IV. Industrial priorities in Mexico*

Background

Mexico's industrial development has taken place in the framework of a mixed economy, under a legal system that provides for public, private and social forms of ownership and also lays the basis for State intervention in the country's economic sphere. Article 27 of the Constitution, dating from 1917, reserves to the State ownership of water, minerals and underground resources, in other words, those natural resources with the greatest industrial potential; at the same time it empowers the State to grant concessions to private persons to exploit these resources, with the exception of petroleum and hydrocarbons. Private property, for its part, is recognized as a right, but always subject to regulation and supervision by the State in the public interest. Social ownership relates to a communal system of exploitation.

The areas reserved exclusively for the State are petroleum and other hydrocarbons, basic petrochemicals, exploitation of radioactive minerals and generation of nuclear energy, mining in the cases referred to in the relevant law, electricity, railways, telegraphic and radio-telegraphic communications and others specified in individual laws.[42]

Furthermore, the public sector has gradually expanded its participation, side by side with private initiative, in certain manufacturing branches, including iron and steel, fertilizers, paper, sugar, foodstuffs, textiles, metal-working and engineering, printing and publishing. In 1974, 790 entities were subject to State control, including 65 semi-autonomous organizations, 258 enterprises with majority State participation, 46 federal and municipal public works, 387 trust funds *(fideicomisos)* set up by the Federal Government and 35 enterprises with minority State participation. In a word, the direct influence of the State on the operation of the mixed system has been extensive.

For its economic regulatory activities, the Government has a number of traditional instruments at its disposal, such as tariffs, price controls and tax and monetary measures to correct economic conditions that may be detrimental to given social sectors or cause distortions in the operation of the economy at the level of aggregate supply and demand.

This study will analyse the process by which industrial priorities within the mixed-economy system of Mexico are determined.

Industrial priorities are set at two separate levels. First, special incentives are granted for the establishment and/or expansion of enterprises in sectors considered to have priority. Secondly, direct investment by the State decisively influences the orientation of industrial development by promoting the use of certain inputs, stimulating the supply of specific markets, promoting or permitting various types of

*Leopoldo Solís, Subdirector General, Banco de México SA, Mexico City.

[42] See the Law on the Promotion of Mexican Investment and Regulation of Foreign Investment, *Diario Oficial* (Mexico City) 9 March 1973.

competition within the industrial sector etc. All these impulses provided by industrial policy determine the degree of effectiveness of the sector in pursuing the objectives it is expected to achieve within the country's development model.

The setting of industrial priorities has been the result of the functioning of regulatory agencies, promotional bodies, and public and semi-public industrial enterprises, simultaneously acting under loosely co-ordinating mechanisms. Operating criteria are established mostly on an *ad hoc* basis. Policy instruments created originally for other means have come to be used as tools of industrial programming, i.e., import licences, and no specific means have yet been developed for some purposes.

The institutional framework

The institutions playing a part in determining industrial priorities can be subdivided into four main groups: *(a)* the State secretariats that have industrial policy functions; *(b)* the financial institutions that govern the channelling of credits to industry; *(c)* other organizations in the public sector designed especially to support industrial activities, either directly or through productive investment in basic sectors; and *(d)* associations of industrialists, which exercise an influence on the making of government policies and establish guidelines for action by affiliated enterprises.

State secretariats

There are four State secretariats with industrial policy functions, namely, the Secretariat of Industry and Commerce, the Secretariat of Finance and Public Credit, the Secretariat of National Property and the Secretariat of the Presidency.

The Secretariat of Industry and Commerce is responsible for protecting and promoting industry; regulating and promoting technical and industrial research; planning and setting, in consultation with the Secretariat of Finance and Public Credit, tariffs; placing quantitative restrictions on imports and exports; intervening with respect to industrial and commercial property matters; promoting foreign trade; providing technical advice to private enterprise on establishing new concerns; and, in general, intervening in production, distribution and consumption, where these affect the general economy.

The Secretariat of Industry and Commerce is, then, the main body responsible for setting industrial priorities. It implements the policy of tariff protection for industry and, together with the Secretariat of Finance, establishes duties and tax incentives for industry. In addition, it has established specific machinery for regulating the transfer of technology and foreign investment.

The Secretariat of Finance and Public Credit is responsible for collecting federal taxes and budgeting expenditure by the Federal Government, supervising the budgets of the main enterprises in the public sector, implementing monetary and credit policy, administering customs and tax inspection services of the Federal Government, and carrying out all other functions related to taxation. The Secretariat of Finance

plays an important role in industrial promotion by administering tax incentives to promote industrial decentralization and exports of manufactured products and by establishing criteria for channelling credits to industry through the country's banking system.

The Secretariat of National Property is responsible for acquiring, supervising, conserving and administering publicly owned property and renewable and non-renewable natural resources and for granting concessions and supervising the exploitation of these resources. It is also in charge of supervising the operation of semi-autonomous organizations and enterprises exploiting the country's natural resources and assets and companies in which the Federal Government holds shares or interests. Thus, the purchase, expansion and operations of public enterprises are subject to the supervision of the Secretariat of National Property.

The Secretariat of the Presidency is responsible for co-ordinating the investments of the various public-sector organizations, and also for planning and supervising government investment and investment by semi-autonomous organizations and enterprises in which the State has a share. Through these co-ordinating and planning functions, the Secretariat of the Presidency regulates the investments of public-sector enterprises and investments in infrastructure. The latter condition the potential expansion of industrial activity and the former strongly influence the fixing of industrial priorities through the exploitation of natural resources and the supply of basic inputs for industry.

Financial institutions

The Mexican banking system consists of the State banking system and financial institutions in the private sector. The State banking system comprises national credit institutions, which, in addition to the Banco de México, the central bank, include Nacional Financiera, SA, and the Banco Nacional de Comercio Exterior (National Foreign Trade Bank). These institutions channel their resources mainly into key industries of the economy whose financial requirements have not been adequately covered by the private sector. Recently, the "mixed bank" has been introduced as a new form of State participation in Mexico's financial sector, in association with private shareholders.

The country's banking system has operated on the basis of specialization, both in the obtaining of resources and in the granting of credit. This specialization is, however, fairly flexible, permitting a juxtaposition of functions.[43]

The private banking system developed remarkably between 1940 and 1970. While the average annual growth of the economy during this period was around 6.5 per cent, the growth of resources available to credit institutions reached a rate of more than 18 per cent.

The institutions regulating the flow of credit to industry are the Banco de México and Nacional Financiera.

The Banco de México is empowered, *inter alia*, to regulate means of payment and domestic liquidity, as well as the amount and type of credit to be used to promote economic growth. The bank has at its disposal several regulatory instruments. It can vary the rediscount rate, buy and sell securities in the open

[43] Mario Ramón Beteta, *El Sistema Bancario Mexicano y el Banco Central*, Collection of CEMLA Studies (Mexico City, Centre for Latin American Monetary Studies, 1964).

market, change the compulsory rate of deposit and fix the maximum and minimum active interest rates of private banks. None the less, characteristics typical of a developing economy, such as a weak securities market and high interest rates, have made it difficult to use open-market operations and variations in the rediscount rate as control instruments. Consequently, the bank has mainly used changes in the reserve requirements as a means of exercising its regulatory powers. The direct operation of the bank does not cover the whole of the banking system, but it has gradually extended its influence, especially in the private sector.

Nacional Financiera operates as a development bank. Its main function is to channel finance, predominantly on a long-term basis, to industries that are fundamental to the country's economic growth. For this purpose, it regulates the national securities market, acts as an international financial agent for the Federal Government and guarantees the credits of financial or investment companies.

Other organizations in the public sector

At various times the Government has set up highly diversified semi-autonomous organizations and State enterprises to support industrial activities.

In some cases, the Government has assumed direct control over sectors considered strategic or constituting natural monopolies, e.g., petroleum, basic petrochemicals, railways and the electrical industry. In the petroleum sector, the enterprise known as Petróleos Mexicanos was created, and in the petrochemical sector, the Petrochemical Industry Committee, whose function is to determine which branches of activity may be undertaken by private enterprise and which must be dealt with by the State. In the railway sector, Ferrocarriles Nacionales (the national railways) was created, and in the electrical industry sector the Federal Electricity Commission.

In other sectors, the Government has sought to promote industries considered essential for the country's development that, in terms of the magnitude of the investment required, have been beyond the means of the private sector, such as iron and steel, fertilizers and paper. The Government has established the Altos Hornos de México and Lázaro Cárdenas Las Truchas iron and steel complexes, the Guanos y Fertilizantes (guano and fertilizer) complex, and the Tuxtepec paper mill.

In the case of the sugar and foodstuffs industries, the State has absorbed industrial units in conjunction with agrarian reform or measures to supply essential items. Sugar mills in the public sector account for 50 per cent of the country's production, and this activity is regulated through the National Financial Institution for the Sugar Industry and the National Union of Sugar Producers. In the case of the foodstuffs industry, the State operates the National Consumer Necessities Distributing Company.

In still other sectors, the State has rescued bankrupt private enterprises whose activities it has felt deserved support, as happened in the textile and metalworking and engineering industries. In the textile industry, the Government owns only one enterprise, Ayotla Textil, and in the metalworking and engineering industry it owns the Complejo Industrial de Ciudad Sahagún, a large complex manufacturing railway coaches and motor vehicle parts.

State enterprises have been set up to supply the Government itself in the military, printing and publishing branches.

Associations of industrialists

Two nation-wide organizations represent industrial private enterprise, namely, the Federation of Chambers of Industry (CONCAMIN) and the National Chamber of the Manufacturing Industry (CANACINTRA). CONCAMIN represents the interests of large enterprises, including companies with foreign participation, while CANACINTRA, which was originally one of the constituent bodies of CONCAMIN, represents the views of small or medium-sized enterprises. The two groups often adopt opposing positions on the country's industrial policy, particularly as regards protection policies and foreign investment. CONCAMIN, whose members have more possibilities for acquiring foreign inputs, has attached less importance to protection or industrial integration. It has rather concerned itself with seeking more effective participation in the formulation of tariff policy. CANACINTRA, whose members mainly manufacture products with a high proportion of domestic inputs, has supported a restrictive policy on imports and has opposed the uncontrolled expansion of direct foreign investment.

The divergence in the interests of the two groups has focused on the administration of quantitative controls. CONCAMIN objects to their generalized use, while CANACINTRA favours it. This divergence has, in the opinion of some authors, prevented industrial private enterprise from adopting a common position in dealing with the Government, which has had the ultimate effect of limiting the influence of entrepreneurs on the determination of industrial priorities.[44]

Industrial policy

The recent evolution of industrial policy in Mexico is better understood as part of the country's overall development strategy. The appropriate orientation for the industrialization process and the objectives which the industrial sector is called upon to realize have been determined by the development model adopted.

Development strategy

The development strategy applied in the country until the beginning of the 1970s has been called one of "stabilizing development."[45] Its basic objective was to promote rapid economic growth while at the same time maintaining exchange-rate and price stability. The basic mechanism for achieving these objectives consisted in maintaining a high rate of return for private investment, which was ensured through massive import substitution; public investments in infrastructure; a narrow tax base and a non-graduated tax structure, which extended preferential treatment to profit, reinvestment, interest and unearned income; and moderate increases in real wages.

The growing budgetary deficit in the public sector arising out of a tax policy designed to promote private investment was financed through expanding domestic

[44] Rafael Izquierdo, "El proteccionismo en México" in Leopoldo Solís, ed. *Ensayos sobre la Economía Mexicana* (Mexico City, Fondo de Cultura Económica, 1973).

[45] Antonio Ortíz Mena, "Desarrollo estabilizador: una década de estrategia económica en México", paper presented at the annual International Bank for Reconstruction and Development/International Monetary Fund meeting, Mexico City, September 1969.

and foreign credit arrangements. The domestic resources came primarily from domestic savings collected by financial and banking institutions, channelled to the public sector through the central bank's reserve requirement system. Price stability gave rise to a strong boom in the Mexican finance system, whose growth rate increased to more than double that of the domestic product at current prices. This made it possible to increase the amount of finance for the public sector year by year, and at the same time channel increasing financial resources into the private sector. By contrast with what took place during the Second World War and the years immediately following it, in this phase new currency issues of an inflationary nature were no longer used to finance deficit operation by the public sector.[46]

In the context of the stabilizing development strategy, industrialization continued to be considered a *sine qua non* for development, as it had been since the 1940s. Import substitution was intensified; protection was broadened, and accelerated industrial growth was achieved. In contrast, the growth rate of agriculture and stockraising declined. Exports consisting mainly of agricultural products also slumped, not only as a consequence of the decreased dynamism of the agricultural and stockraising sector, but also as a result of the bias against exports arising out of industrial protection itself.

The country's growth process turned increasingly inward, through import substitution and the promotion of the broadest possible industrial base, well protected against external competition. Consequently, the prices of inputs of industrial origin, including those used in agriculture, and of consumer goods of the same origin rose. The resulting transfer of resources from farmers and consumers to manufacturers meant increased profits for industry, which were not heavily taxed owing to the preferential treatment granted to income from capital.

All the above-mentioned factors encouraged accelerated growth and diversification of industrial activities. In addition, the State artificially reinforced industrialization through its direct intervention in the development of the sector.

Public enterprises producing basic inputs for industry, especially in the field of energy, i.e., petroleum and its derivatives and electricity, not only supplied these goods and services at the rate required for an accelerated expansion of industry, but also followed a policy of fixed prices independent of production costs. In fact, the prices for these inputs were kept virtually unchanged throughout the 1960s. In addition to being a decisive factor in achieving the price stability enjoyed by the country during this period (the annual average increase in the implicit deflator of GDP between 1960 and 1970 was 3.5 per cent[47]), this policy represented a growing subsidy to industry, which brought about greater profitability and a consequent increase in savings capacity and expansion in industrial plant. Furthermore, during this period the Government established and expanded a wide range of administrative mechanisms specially designed to promote the expansion and diversification of industrial activities.

To sum up, the very nature of the development strategy adopted by Mexico in the 1960s encouraged accelerated expansion and diversification of industry, to the detriment of other productive activities, especially in the agricultural and stockraising sector. In addition, the instruments used by the State to promote industrial development encouraged the indiscriminate establishment and expansion of

[46] Leopoldo Solís, *La Economía Mexicana: Retrovisión y Perspectivas* (Mexico City, Fondo de Cultura Económica, 1971), pp. 108-123.

[47] Banco de México, SA, Annual Reports.

import-substitution industries, for the multiple purpose of improving the country's external position, modernizing productive activities in the economy by increasing the relative share accounted for by industry in the generation of the domestic product, and raising the income level of the population.[48] The industrialization policy followed during this period attached little importance to the geographical distribution of industry; to exports, competitiveness and efficiency in the operation of the industries promoted; to foreign participation in enterprise capital; or to integration of the industrial structure.

Recent evolution of economic policy

Towards to end of the 1960s, a number of imbalances generated by the development strategy adopted became apparent. The distribution of income did not improve with the passage of time; production became increasingly oriented towards responding to the consumption patterns and preferences of the upper income groups in the population. The import-substitution approach strengthened the tendency to introduce new consumer goods in the domestic market, copied from innovations generated by consumer societies in the developed countries.

The technology for producing these articles also came from abroad, almost always linked either with the import of machinery and equipment or direct foreign investment. The imported technology, designed to take into account the relative factor abundance in the industrialized countries, was too costly for the country because it required a high proportion of capital inputs and parts and components produced abroad. Furthermore, the protectionist measures and other mechanisms for promoting industrial development encouraged the import of capital goods to a disproportionate extent with the simple intention of promoting physical investment by artificially reducing the private cost of the capital used in manufacturing processes.

The combination of these factors in the context of a population with one of the highest growth rates in the world gave rise to a chronic deficit in the capacity of the productive system to generate jobs, which was reflected in substantial increases in unemployment and underemployment. In addition, the country became more dependent on foreign countries, since the deficit in the goods and services account of the balance of payments, aggravated by these factors, had to be financed through a growing foreign debt. Import substitution in respect of consumer goods generated growing requirements for capital goods, inputs and technology from abroad, also encouraging increased participation by transnational enterprises in the operation and expansion of the domestic productive system, above all in the most dynamic manufacturing branches.

The external deficit arose, not out of inadequate external demand, but out of the inability of the productive system to increase exports as rapidly as necessary. The problems relating to exportable supply were primarily associated with the inflexibility of the rate of exchange, loss of dynamism of the agricultural and

[48] Since the productivity of industry is higher than that of other activities, the policy adopted discrirninated against the agricultural and stockraising sector in favour of industry, with a view to maximizing income. However, investments in agriculture and stockraising can considerably increase the sector's product-capital ratio and may have a greater productivity than many industrial investments, thus making a larger contribution than industry to the objective of growth, quite apart from their obvious relative advantage in the creation of jobs.

stockraising sector and the low degree of competitiveness and efficiency of industry resulting from the indiscriminate import-substitution policy.

The growing fiscal deficit also limited participation by the public sector in the economy, making it difficult for public-sector action to offset at least partially the social and equity imbalances in the distribution of income arising out of the development model followed. Greater dynamism was required in public investment, both to create the physical infrastructure necessary for industrial expansion and to guarantee the supply of basic inputs produced by public enterpises. Growing demands were, in turn, being placed on investment and current expenditure of a social nature by a steadily growing population. None the less, tax levels were kept down, in comparison with countries at a similar level or even a lower level of development; and public enterprises operated with growing financial deficits, which limited their expansion programmes and gave rise to increasing bottle-necks in the productive structure, resulted in additional imports and implied growing financial transfers and support from the national treasury.

Furthermore, the machinery for the promotion of economic activity, especially the not very selective tax incentives policy and the rate structure for transport, strengthened the economic forces favouring geographical concentration and polarization of economic activity. The country's industrial growth was concentrated in the main urban centres of consumption, especially Mexico City; and the disparities in standards of living became accentuated, since the concentration of other types of activities, particularly services, was promoted. All these factors together encouraged excessive population growth in the country's main cities.

Thus, at the beginning of the 1970s, the size of the revenue deficit and of the external deficit made it very difficult to maintain both the high economic growth rate and the stability of prices and the exchange rate,[49] bringing about a conflict of objectives in the development strategy. The deterioration in the purchasing power of most of the population, arising out of the bias towards concentration of personal income and the growing inability of the system to create new jobs, made the development strategy based on the model of inwardly focused growth unworkable. The lack of dynamism of the agricultural and export sectors limited the possibility of continuing to increase the growth rate of national production. In a word, the economic policy adopted in the 1960s was no longer viable.

In the last few years, new guidelines and priorities have been set for the development of the industrial sector to correct the imbalances that arose in the initial stages of industrialization, to contribute more efficiently to the achievement of national objectives and to develop the capital goods sector.

Industrial policy objectives may be briefly outlined as follows:

(a) To increase job-creation capacity;

(b) To maintain the high growth rate industry has shown in the past;

(c) To offset, through exports of manufactured goods, the foreign exchange needed for the expansion of industry;

(d) To achieve a more balanced geographical distribution of industry and create new development poles in backward areas;

[49] The only short-term means of adjustment for reducing the current-account deficit while maintaining a fixed exchange rate consists in lowering the rate of growth of the domestic product to reduce the growth of imports. This means was used in 1971 and resulted in a sharp drop in the real growth rate of GDP, from an average of 6.8 per cent in the 1960s to 3.2 per cent in 1971.

(e) To orient industrial production more strongly towards the needs of the great majority of the population;

(f) To reduce industry's dependence on foreign capital and, in particular, on the service "packages" it obtains from transnational enterprises;

(g) To develop its own capital goods industry to neutralize capital for the country from cyclical fluctuations in the world economy.

These objectives will serve as the frame of reference for evaluating the criteria for industrial priorities.

Policy on foreign investment and transfer of technology

Direct foreign investment has made an important contribution to the country's development in terms of production, employment, financial resources and tax revenue. None the less, it has also encouraged a high degree of industrial concentration, adversely affected the balance of payments, resulted in the purchase of unsuitable and costly technology and placed growing pressure on domestic financial resources.[50]

The foreign share in industry has grown largely as a result of the support given to industrialization, particularly in the form of protection and tax incentives, and the policy followed by the Government regarding foreign investment up to 1973, when the Law on the Promotion of Mexican Investment and Regulation of Foreign Investment was promulgated.

The new legislation attempts to strengthen the negotiating position of the State vis-à-vis foreign capital so that the external services required for development can be acquired selectively and at the lowest possible cost. The Law recapitulates and supplements previous regulations, dating back to various periods, defining specific activities in which it is considered advisable to permit direct foreign investment and the conditions under which it is desirable, and lays down that, as a general rule, in all other sectors foreign investment may account for not more than 49 per cent of the capital of Mexican companies.

The Law defines foreign investment as investment by foreign corporate bodies and physical persons, foreign economic entities without legal personality and "Mexican business enterprises in which foreign capital accounts for a majority share or in which foreigners are empowered in any capacity to take decisions on the management of the enterprise" (Article 2). The Law regulates the following acts relating to goods, property or rights by foreign investors: *(a)* the acquisition of capital or fixed assets of Mexican enterprises existing or to be established; *(b)* control of the administration of an enterprise or authority to take decisions on its management; *(c)* installation of a new establishment; *(d)* new fields of economic activity; and *(e)* new lines of products.

This statute created the National Registry of Foreign Investments and the National Commission on Foreign Investment, the former to serve as a control organ and central agency for information on foreign investment, and the latter as the body

[50] Fernando Fajnzylver and Trinidad Martínez Tarragó, "Las empresas transnacionales: expansión a nivel mundial y proyección en la industria Mexicana". (Mexico City, Centro de Investigación y Docencia Económica, A.C., 1975), pp. 187-196. Mimeograph.

responsible for co-ordinating the action of federal agencies in this field and dealing with applications relating to investment involving operations in the five areas listed above.

Applications are evaluated primarily on the basis of the following criteria: complementarity between foreign and domestic investment; magnitude and degree of integration of branch of activity involved; contribution to the balance of payments; generation of jobs and training of Mexican technicians and administrators, as well as technological development; diversification of sources of investment; degree of financing of operations with foreign resources; and, lastly, contribution towards industrial decentralization and the incorporation of domestic inputs and components into products manufactured.

Government policy concerning the development and transfer of technology has in general been passive and marginal. Although before 1972, the year in which the specific law on the subject was promulgated,[51] attempts had been made to introduce technological criteria into industrial development policy, there was no overall policy on the transfer of technology.

The legislation in force is intended to regulate one of the phases of the technological process, namely, purchase of technology, in order to avoid excessive or unjustified payment of royalties and to eliminate restrictive clauses that have generally been included in transfer of technology contracts. This control is exercised through the National Transfer of Technology Registry under the control of the Secretariat of Industry and Commerce.

Instruments of industrial policy

The main machinery for regulating industrial activity the Mexican State has used up to now includes the instruments used in protection policy—customs duties, quantitative import controls and manufacturing programmes; various tax incentives that have been applied to promote exports of manufactures, geographical decentralization of industry and reinvestment of profits; and financial incentives, price regulation and machinery regulating foreign investment and transfer of technology.

Tables 8 and 9 summarize the main industrial development instruments.

Tariffs

Duties on imports have not played a very important role as a mechanism of protection. In 1929, the first tariff schedule with genuinely protectionist aims was established; the average level of the tariff was none the less fairly moderate, and its coverage was narrow. The changes in the tariff over the years have primarily reflected objectives relating to government revenue, the balance of payments or administrative improvement. However, many specific headings of the tariff schedule were altered to

[51] The provisions of this law have been analysed in detail in *National Approaches to the Acquisition of Technology*, Development and Transfer of Technology Series No. 1 (United Nations publication, Sales No. 78.II.B.7).

TABLE 8. PRINCIPAL TYPES OF FISCAL INCENTIVES

Instrument of industrial promotion / *Requirements, incentives and type of beneficiary*	*Law on the promotion of new and necessary industries*	*Subsidies for exports and frontier zone sales*	*Temporary imports and exports*
Requirements	*40% maximum imported content calculated on direct production cost	*50% minimum domestic content	*40% minimum domestic content (a lower percentage may be accepted if it can be justified on economic grounds)
	*Minimum in-plant processing 10% (flexible)	*Will be applicable to products listed in the *Diario Oficial* of 9 January 1975 in accordance with the new tariff (ICE)	*Deposit equivalent to 100% of the taxes resulting from the operation plus 10% to cover fines (a preventive measure)
	*Minimum of 51% of shares in the hands of nationals		
	*Remittances abroad for technical assistance and the exploitation and use of patents and trade marks not to exceed 3% of sales		
	*Maximum rate of interest in accordance with the international foreign credit market (variable)		
	*Employment of foreigners limited to one-year contracts, renewable, with salaries between 10% and 20% of the total wage bill		
	*Sales prices will depend on price movements in the country of origin		
	*2% of tax savings for administrative expenses		

IN MEXICO FOR INDUSTRIAL DEVELOPMENT

Regulation of the maquila industries	*Incentives to decentralization aimed at promoting regional development*	*Rule VIII*	*Reinvestment incentives*
*Imports in accordance with the requirements set out in the regulations governing temporary imports	*Minimum of 51% national capital	*An integration programme is required	*Permission to be requested from the Secretariat of Finance and Public Credit
*Export of production	*Remittances abroad for the use of patents, trade marks and technical assistance will be determined individually but must not exceed 3% of sales	*The integration programme must be approved by the Secretariat of Industry and Commerce	
	*Contracts making provision for payment for the use of patents, trade marks and technical assistance may not put restrictions on export		
	*Prior authorization to raise foreign credit		
	*Products must have 60% domestic content (a lower figure may be allowed provided there is a time-table for integration)		
	*The management of the undertakings and the boards of directors must be Mexican		
	*Profits may not be exempt from state taxes		
	*4% of tax savings as payment for administrative expenses		

TABLE 8

Instrument of industrial promotion / *Requirements, incentives and type of beneficiary*	*Law on the promotion of new and necessary industries*	*Subsidies for exports and frontier zone sales*	*Temporary imports and exports*
Incentives	*Refund of 100% of import duties on machinery, equipment and spare parts	*Refund of up to 100% of the net federal share of indirect taxes	*100% exemption from general import and export duties
	*Refund of 100% to 25%, on a decreasing scale, on import duties on raw materials and components	*Refund equal to 11% of the sales price *ex* factory (in practice this is the same for all products)	
	*Refund of 100% of tax on trading revenues	*100% refund of duties on imported inputs (when they are not subject to the temporary import régime)	
	*Refund of 100% of stamp tax *Rebate of income tax up to a maximum of 40%	*Permission not to accumulate the amount refunded for purposes of calculating overall company tax (making annual adjustments) *The labour tax and the sales tax in respect of technical assistance royalties and dividends can also be covered with the refund *Tax Refund Certificates (CEDIs) are accepted by the governments of the states as payment for all tax on trading revenues	

(continued)

Regulation of the maquila *industries*	*Incentives to decentralization aimed at promoting regional development*	*Rule VIII*	*Reinvestment incentives*
	ZONE 2		
*Refund of 40% of total of import duties deposited	*50% to 100% rebate on general import duties	*Duty will be charged by unit of volume in conformity with the corresponding tariff item in the new General Import Duty Schedule	*Up to 100% rebate on income tax in respect of formation of reinvestment reserves through accelerated depreciation
*Complementing the United States import duties on value added outside the country to raw materials and components of United States origin are recovered	*50% to 100% rebate on labour tax	*Imports may be made in one or more consignments and through one or more custom-houses	
	*60% to 100% rebate on income tax *Accelerated depreciation *50% to 100% rebate on the tax on trading revenues		
	ZONE 3		
*The majority of the capital does not have to be in national hands	*60% to 100% rebate on general import duties *60% to 100% rebate on labour tax		
*Facilities for foreign personnel in the provision of services	*60% to 100% rebate on income tax *Accelerated depreciation *60% to 100% rebate on the tax on trading revenues		
*Authorization for finished goods to be sold on the domestic market provided that: *(a)* they do not compete with national goods; *(b)* they replace imports; and *(c)* they comply with all the fiscal requirements laid down			

TABLE 8

Instrument of industrial promotion / *Requirements, incentives and type of beneficiary*	*Law on the promotion of new and necessary industries*	*Subsidies for exports and frontier zone sales*	*Temporary imports and exports*
		*CEDIs can be cashed at the National Foreign Trade Bank (if there is a surplus after payment of tax) *25% reduction on railway freight charges *11% refund of indirect taxes on the total value of their operations for exporters of Mexican technology and services *11% of *ex* factory value as refund of indirect tax for import substitution, based on international competition *100% exemption from income tax and tax on trading revenues in respect of payment abroad of commissions for services in connection with exports *Permission for exporting companies to use direct costing methods	
Beneficiaries **New industries:** **Basic industries**	*100% exemption from general import duty in the first four years, 50% in the next three years and 25% in the final three years *100% exemption from the tax on trading revenues *100% exemption from stamp tax *Up to 40% rebate on income tax	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
Semi-basic industries	*100% exemption from general import duty in the first three years, 50% in the next two years and 25% in the final two years	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met

(continued)

Regulation of the maquila industries	*Incentives to decentralization aimed at promoting regional development*	*Rule VIII*	*Reinvestment incentives*
*Manufacturing plant not established for *maquila* activities may be so used provided it meets the requirements			
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met

TABLE 8

Instrument of industrial promotion / *Requirements, incentives and type of beneficiary*	*Law on the promotion of new and necessary industries*	*Subsidies for exports and frontier zone sales*	*Temporary imports and exports*
	*100% exemption from tax on trading revenues *100% exemption from stamp tax *Up to 40% rebate on income tax		
Secondary industries	*100% exemption from general import duty in the first two years, 50% in the next two years and 2% in the final year *100% exemption from tax on trading revenues *100% exemption from stamp tax *Up to 40% rebate on income tax	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
"Necessary" industries: Basic industries	*The same as for new industries	*As for new industries	*As for new industries
Semi-basic industries	*As for new industries	*As for new industries	*As for new industries
Secondary industries	*As for new industries	*As for new industries	*As for new industries
Specialist trading companies		*Additional refund of indirect taxes in the amount of 4% of the *ex* factory value	
Export industries		*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
Maquila industries			
Enterprises engaging in new activities in a municipality	*The same as for new industries		*The same general incentives provided the requirements are met

(continued)

Regulation of the maquila industries	*Incentives to decentralization aimed at promoting regional development*	*Rule VIII*	*Reinvestment incentives*
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*As for new industries	*As for new industries	*As for new industries
	*As for new industries	*As for new industries	*As for new industries
	*As for new industries	*As for new industries	*As for new industries
*The same general incentives provided the requirements are met		*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
*The same general incentives provided the requirements are met			
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met

TABLE 8

Instrument of industrial promotion / *Requirements, incentives and type of beneficiary*	*Law on the promotion of new and necessary industries*	*Subsidies for exports and frontier zone sales*	*Temporary imports and exports*
Enterprises utilizing products from the zone			*The same general incentives provided the requirements are met
Enterprises engaging in activities new in the country	*The same as for new industries		*The same general incentives provided the requirements are met
Enterprises filling gaps in supply			*The same general incentives provided the requirements are met
Enterprises nationalizing their production			*The same general incentives provided the requirements are met
Enterprises expanding their capacity			*The same general incentives provided the requirements are met
Enterprises investing their profits to establish or expand industrial undertakings			*The same general incentives provided the requirements are met
Enterprises of particular national interest	*The same as for new industries		*The same general incentives provided the requirements are met

*Refers only to commercial enterprises.

grant protection to new products or to enlarge the margins for existing products as a result of continual negotiations between the Government and various groups of entrepreneurs. Between 1964 and 1970, the number of dutiable items grew at a rate of more than 1,000 a year; in 1970, around 12,900 items were dutiable. The tariff levels applied to this large number of items varied greatly because the tariff was designed to answer various purposes, e.g., protecting domestic production, discouraging unnecessary imports and favouring imports of products not manufactured in the country. This lack of uniformity was further aggravated when a surcharge of 10 per cent on the import of luxury articles, revenue from which was earmarked for financing exports of domestic manufactures, was introduced in 1962.

(continued)

Regulation of the maquila industries	*Incentives to decentralization aimed at promoting regional development*	*Rule VIII*	*Reinvestment incentives*
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met
	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met	*The same general incentives provided the requirements are met

The fiscal function of the tariff has also been fairly insignificant and has declined in the course of time. The share of federal government revenues obtained from import duties declined from 38 per cent in 1930 to 21 per cent in 1951, and to 13 per cent in 1968. This decline is explained primarily by the expanded application of quantitative controls to imports. In Mexico, the tariff has been designed primarily to protect the production of consumer goods and to establish a liberal system for importing intermediate and capital goods.

It is important to ascertain precisely the level of protection that has been granted to industry through the tariff, taking into account the extensive use made of quantitative controls. The only study that has been undertaken along these lines used

TABLE 9. PRINCIPAL FINANCIAL INSTRUMENTS FOR PROMOTING INDUSTRIAL DEVELOPMENT

Promotion instrument / *Requirements and forms of encouragement*	*National Fund for Pre-investment Studies (FONEP)*	*National Fund for Industrial Equipment (FONEI)*	*Guarantee and Development Fund for Medium-scale and Small-scale Industry (FOGAIN)*	*National Industrial Development Fund (FOMIN)*	*Fund for the Promotion of Exports of Manufactured Goods (FOMEX)*
Requirements	No specific requirements are laid down. Any interested party from either the public or the private sector may make application to the Fund	The majority of the capital must be in national hands Enterprises to be assisted must have the exclusive aim of exporting products and/or of import substitution The committee of the Fund will evaluate projects to determine whether or not they are acceptable All credits will be handled through a bank or finance institution	Enterprises using this form of assistance must have a minimum net worth of 300,000 pesos in zone 1 and 25,000 pesos in zones 2 and 3	Enterprises interested must submit a technical, economic and financial feasibility study when the Fund's contribution amounts to between 1 million and 3 million pesos; for lesser amounts, a study is not required	Minimum of 50% domestic integration in export operations Minimum of 60% domestic integration in import substitution operations Enterprises offering technical services abroad must be established in accordance with the legislation in force

Forms of encouragement	Minimum financing is 25,000 pesos The rate of interest is 7% a year on unpaid balances The repayment period is 3 to 8 years according to the cost of the study There is a grace period of up to 24 months, depending on the duration of each study Technical assistance in carrying out studies, from initial planning to final evaluation	Financial assistance is for the purchase of fixed assets: machinery, equipment, buildings, etc. The rate of interest is 12% a year on unpaid balances, with the variation that the institution acting as intermediary is given 10% a year on unpaid balances, the remaining 2% falling on the industrialist The repayment period may be up to 13 years including a grace period of up to 3 years Financing ranges between 3.5 million pesos and 37.5 million pesos	The rate of interest will be 11% a year for zone 1 and 10% and 9% a year for zones 2 and 3 respectively Requests for credit may be made through national credit institutions as well as private institutions The Fund can offer the industrialist up to 75% of the credit as guarantee, provided it does not exceed a total of 150,000 pesos and the enterprises are located in zones 2 and 3 Types of credit available are: *(a)* equipment credit up to 2.5 million pesos, *(b)* running expenses credit up to 3.5 million pesos and *(c)* mortgage credit up to 6 million pesos. If more than one of these types of credit is requested, the total loan may not exceed 8 million pesos Technical assistance will be given to those requesting it	A maximum of 30% of enterprise capital When the enterprise begins to declare dividends, the Fund sells its share	The interest rate is 6% a year Immediate loans for exports Granting of guarantees, with 90% refund Immediate loans between the conclusion of the operation and the receipt of payment from abroad (bridging finance) Financing of deferred payment sales Financing of producttion for export Financing for the maintenance of stocks of goods for export Financing of the cost of inventories Financing of services exported Financing of import substitution

data for 1960.[52] It shows that the average nominal tariff weighted on the basis of gross production by sector was 22 per cent in 1960. Nevertheless, the tariff obtained by comparing domestic prices with international prices in this sectoral classification was 15 per cent, which is considerably less than the nominal tariff.

Excessive protection margins are to be found mainly in the case of manufactures with a long tradition of production in Mexico and account for a substantial share of domestic industrial production. The opposite situation where implicit protection exceeds nominal protection occurs in the case of products facing real competition from imports or smuggling, such as consumer durables and equipment (see table 10).

TABLE 10. NOMINAL TARIFFS AND EFFECTIVE PROTECTION, BY PRODUCT GROUP, 1960

(Percentage)

Products grouped by sector of origin	*Nominal protection*		*Effective tariff protection*		*Effective implicit protection*	
	Tariff	*Implicit*	*Balassa method*	*Corden method*	*Balassa method*	*Corden method*
Total average (I to X)	22.0	15.0	35.0	31.0	28.0	25.0
Average for manufactures	35.0	24.0	74.0	64.0	48.0	42.0
I Agricultural	6.7	6.5	3.9	3.7	3.1	3.0
II Processed foods	21.2	18.3	23.0	23.0	4.7	5.7
III Beverages and tobacco	69.8	28.8	257.8	204.5	48.1	42.4
IV Mining and energy	4.2	4.4	- 6.6	- 5.9	- 5.1	- 4.9
V Construction materials	26.3	- 3.6	97.0	72.6	0.6	0.8
VI-A Simple intermediate products	24.4	21.8	58.0	49.8	42.2	37.1
VI-B Complex intermediate products	33.5	24.6	67.0	59.3	42.0	37.8
VII Non-durable consumer goods	63.9	25.4	129.2	112.0	31.9	29.9
VIII Consumer durables	40.8	49.0	86.7	78.3	100.9	83.0
IX Machinery	10.6	28.8	10.1	9.5	40.6	37.8
X Transport equipment	18.0	26.0	29.6	26.3	41.8	37.0

Source: Gerardo M. Bueno, La estructura de la protección en México, 1970. [*Translator's note:* The reference should probably be to G. Bueno, "The structure of protection in Mexico", in Bela Balassa and others, *The Structure of Protection . . ., op. cit.*]

The surplus protection that existed in a wide range of industrial branches made it possible to amend substantially the general import duty schedule in January 1975, with a view to simplifying and updating the schedule and removing shortcomings in the protection function of the tariff.

The tariff levels established as a result of the restructuring are as follows:

(a) For products intended for agricultural and stockraising activities, duties range from 0 to 5 per cent. Agricultural machinery is duty-free owing to the high priority assigned to achieving self-sufficiency in food;

(b) Chemical and pharmaceutical products considered essential in combatting epidemics and in preparing antibiotics are subject to duties of up to 7 per cent;

[52] Gerardo Bueno, "The structure of protection in Mexico", in Bela Balassa and others, *The Structure of Protection in Developing Countries* (Baltimore, Johns Hopkins, 1973).

(c) Imports of basic raw materials not produced in the country are dutiable at the rate of 5-10 per cent. For raw materials that are of secondary importance or have a good chance of being manufactured domestically, a category that includes most intermediate products for industrial use, the rate is 15 per cent;

(d) Finished products are dutiable at a rate of 20-35 per cent, with capital goods dutiable at a rate of 20-25 per cent, and other manufactured products at a rate of 25-35 per cent;

(e) For luxury goods, the duty rate is 50-100 per cent. Cars assembled abroad are virtually the only products dutiable at the maximum rate of 100 per cent,[53] so that it can be stated that the maximum level of the new tariff schedule is 75 per cent.

The number of dutiable items was reduced by 36 per cent to 7,273. The specific duty that still applied to some items was abolished, and all imports were subject only to the *ad valorem* duty. The duties were fixed in accordance with the degree of processing of the products concerned, which reinforced the importance of quantitative restrictions on imports as basic instruments of protection for industry. The average level of import duties, between 16 and 17 per cent *ad valorem*, is extremely low for protection purposes, considering the stage reached in the country's industrial development.

The most significant change took place in the category of tools and machinery. Although the duty rate is about the same as the earlier rate, between 10 and 25 per cent, the previous schedule granted a subsidy of 65 per cent on import duties applicable to all types of machinery, so that the real duty was not 20-25 per cent, but 7-8.75 per cent. The increase of around 200 per cent in nominal protection indicates the new priority assigned to the manufacture of capital goods in the country.

Up to 1974 the Joint Tariff Commission, an intersecretariat body responsible for customs policy in which the Secretariat of Finance and the Secretariat of Industrie and Commerce participate, frequently revised both the number of tariff items and the level of duties on them, after considering requests submitted by enterprises that felt affected by the import duty system. When it was demonstrated that an input was not produced in the country, or else, although it was produced, certain technical requirements for its use as a substitute for the imported input were not met, a new tariff item was established with a low duty to facilitate its import and reduce the production costs of the requesting enterprise. In other cases, when domestic manufacture of an article that had previously been imported was started, an increase in the duty level could be granted to provide additional protection to the industrialist, in case the quantitative control system should not entirely prevent import of the item concerned.

The new tariff schedule considerably reduced the number of tariff items and laid down a single duty rate for each sub-group, including both residual and generic items.[54] This measure, in addition to facilitating customs clearance, is clearly intended to eliminate the previous habit of creating new tariff items in order to alter the duty for specific products. This reform points towards an important change in tariff policy, eliminating the granting of special or case-by-case treatment in response to requests by individual enterprises, which often generates distortions in the assignment of resources within industry.

[53] In this case, as in some others, tariff protection is inoperative, since the importation of cars is forbidden.

[54] The previous schedule provided for higher duties on generic items than on residual items.

To sum up, tariff policy does not pursue protectionist aims, which are left to quantitative import controls. In the tariff reform, the tendency to discriminate against agricultural and stockraising activities was checked, which resulted in a lower level of protection for the manufacture of agricultural machinery. Furthermore, clear priority is given to domestic manufacturing of capital goods through an increase of about 200 per cent in customs protection for this branch, and an attempt is being made to eliminate case-by-case application of the tariff in order to prevent unjustified incentives from being granted to individual industries.

Quantitative controls

Quantitative controls are applied through: *(a)* import licences and *(b)* control of imports by the public sector.

Import licences

The system of licensing imports in use since 1948 has become the main instrument used to protect industry. It has also been used to guide investment towards industrial areas and branches considered to have priority; it has in addition served as an instrument for regulating foreign participation in the capital of industrial enterprises, price levels, efficiency of production and the use of domestic inputs in industry. It is also used in international negotiations on bilateral trade.

The import licence system has been used mainly to cope with balance-of-payments difficulties arising out of the economic circumstances of the moment, and the range of products affected has substantially increased in the course of time. In 1970, it was estimated that 65 per cent of the total value of imported goods and two thirds of all tariff items were subject to the import licence requirements. In 1973, more than 250,000 import licences were processed. As a consequence of the restructuring of the General Import Duty Schedule in January 1975, the range of products covered by the import licence system was expanded even furtlier, and certain items not subject to control were regrouped with others of a general nature for which a licence was required. In July 1975, it was decreed that all tariff items should be subject to this requirement, in order to hold in check a flow of imports that appeared excessive.

The Secretariat of Industry and Commerce is responsible for the administration of import licences. It is assisted in examining applications by over 40 Consultative Import Committees made up of representatives of the Secretariat itself and of groups of industrialists interested in the import or processing of goods subject to quantitative control. Through this machinery, the points of view of the parties concerned with imports are made known, and there are formal channels for expressing disagreement. However, the recommendations of the Committees are not binding, since the Secretariat of Industry and Commerce reserves the right to approve or reject applications submitted for its consideration, at its own discretion.

The existence of domestic substitutes is the commonest criterion for evaluating applications for import licences. What has been called the natural theory of import substitution, according to which "if the domestic market is protected, invisible forces will inevitably appear on the scene to take advantage of the opportunities created by the Government",[55] is generally accepted in the administration of import licences.

[55] Izquierdo, *op. cit.*, p. 267.

There seems to be a tendency to favour the domestic producer over the potential importer and to prohibit imports where a substitute, even if it is not competitive, is produced domestically. This conclusion would appear to be strengthened by a study that demonstrated, on the basis of a sample of import applications, that the main reason for granting import permits was the lack of domestic production of susbtitute goods. In only two of the 1,367 cases considered was importation authorized on the basis of price considerations. In these two cases, domestic prices exceeded import prices by around 200 per cent.[56]

In addition, a formal price criterion exists on the basis of which the import permit will be granted if the price of the domestic substitute for the article to be imported exceeds the price in the market of the country of origin of the imported article by 90 per cent. In 1970, it was announced that the figure of 90 per cent would be reduced little by little, in order gradually to lower the level of protection granted to industry. Not only have the heavy imbalances in the trade balance in recent years prevented this reduction from being carried out, but the price criterion is no longer applied regularly either. When foreign price quotations reflecting sizeable differences in price between the imported article and the domestically produced substitute are presented, the domestic producer invariably argues, through the representatives of the chambers of industrialists in the Import Committees, that dumping is involved. The burden of proof, however, falls on the importer, who must demonstrate that the price obtaining in the country of origin is close to that of the individual quotation contained in his application and considerably lower than the price of the domestic substitute. In short, the criterion of price disparity is not very effective, even in the cases where the competent authorities decide to apply it.

The many factors that must be taken into account in evaluating import applications on a case-by-case basis necessarily include subjective criteria that have given rise to undesirable collateral effects such as: the low degree of integration in many industrial branches; the existence of idle capacity in industrial plant; a wide range of levels of protection in the various industrial branches; the creation of monopolies and a low level of competition in many sectors; the generation of bottle-necks owing to the scarcity of intermediate goods required for the manufacturing of import substitutes; overinvestment in stocks of imported goods as a result of uncertainty concerning regular supply; a substantial wastage of resources absorbed by bureaucratic formalities on the part of both government agencies and importing enterprises etc.

When these problems become evident, the authorities responsible for administering import permits attempt to correct them by refining and multiplying the *ad hoc* rules for regulating imports, which usually aggravates distortions in the assignment of resources and gives rise to stronger controls. This is particularly the case with non-standardized products that cannot be identified by means of generally accepted technical standards.

A serious problem in applying the import licence system is the growing volume of applications that must be processed. In 1973, when around 70 per cent of the tariff items were subject to quantitative control, it is estimated that the Secretariat of Industry and Commerce authorized 250,000 import permits. In 1975, to cope with the growing deterioration in the trade balance, all tariff items were made subject to the import permit requirement.

[56] Bela Balassa, "Foreign trade and industrial policy in Mexico" (Mexico City, March 1974). Mimeograph.

The only imports exempt from the requirement are those of products from the Latin American Free-Trade Association (LAFTA), in which liberalization of quantitative controls has already been negotiated.

In view of the administrative difficulties involved in processing possibly 4,000 applications a day, the Secretariat of Industry and Commerce has incorporated a number of tariff items into the electronic processing system. Under this system, approval or rejection is indicated for each product to speed up action on applications, and only the rejections are considered in detail, on the basis of applications for reconsideration. Under these circumstances, any attempt to rationalize the process of evaluation of import applications is somewhat impracticable.

There is also a time-limit on the controls. Products subject to the permit requirement enjoy protection only long enough (three to five years) to consolidate their position in the domestic market. Although this rule has been applied for a number of years and the period of validity of the relevant decisions is constantly expiring, there is no known case in which the controls have been cancelled. Furthermore, there are still over 2,000 tariff items that were made subject to the import permit requirement before 1970, without a definite time-limit, and no deadline has been fixed for liberalizing their importation.

Thus, it may be concluded that import permits are not in themselves a suitable instrument for indicating investment priorities. The many *ad hoc* criteria constantly being adopted in the application of the system and the problems implicit in its case-by-case implementation have caused these controls to be primarily oriented towards balance-of-payments objectives, even though they have generated distortions in the assignment of resources within industry.

Manufacturing programmes

Since 1965, the Secretariat of Industry and Commerce has been using manufacturing programmes, i.e., agreements between enterprises and the Government, to regulate activities of industrialists wishing to undertake production of an item hitherto imported. These programmes have been administered in close conjunction with import licences. Each programme sets forth the commitments the domestic manufacturer assumes in order to gain protection granted by the State through quantitative controls.

The intention has been, through this machinery, to guide and promote import substitution by inducing producers and importers to produce inputs and parts required for their operation locally and thus raise domestic content. An enterprise wishing to take advantage of the manufacturing programmes is guaranteed exclusive control of the domestic market in that imports of the products it wants to manufacture in the country are made subject to import licensing. In addition, when a manufacturing programme is accepted, the enterprise is guaranteed import licences for the inputs required for its manufacturing activities when these imports are covered by its integration timetable. Lastly, an enterprise applying for a manufacturing programme may benefit from tax incentives.

The manufacturing programmes are the most important instrument for regulating industry. In recent years, manufacturing programmes have been a requirement in all cases where enterprises applied for closing of the frontier in respect of the product they intended to manufacture domestically.

A manufacturing programme is also a requirement for new investments by enterprises in which foreign investors hold a majority share. Furthermore, when an enterprise applies for special tax and financial incentives, submission of a manufacturing programme is often required in order to enable the project to be evaluated. In fact, the manufacturing programmes have tended to be used as though they were industrial investment licences. Their function in determining industrial priorities is therefore of the greatest importance

The criteria applied by the Secretariat of Industry and Commerce for approving manufacturing programmes are as follows:

(a) A timetable for integration, or Mexicanization, is established for the product to be manufactured, and a specific goal fixed with regard to the use of domestic inputs that must be attained in the new production, taking into account the conditions with respect to price, quality and time required for supply that the manufacturers in the subsidiary industry concerned have achieved or are capable of achieving;

(b) A maximum limit is also fixed in respect of the price excess permissible in import substitution. A price differential of around 25 per cent by comparison with the price in the country of origin of the product imported has been the limit generally applied in recent years. In a few special cases, the price excess authorized is less, and has sometimes been fixed as low as 15 per cent;

(c) An export programme, with a suitable timetable, is also requested to offset, at least partially, the cost of the imports required for the new production by generating foreign exchange through exports arising out of the same project. Although in many cases it is hoped to offset the foreign exchange used in the project in full within a given period, the export programme is subject to negotiation, and no more specific criteria for determining the amount of exports agreed upon are known;

(d) The programme also requires the enterprise to have a given capital structure. The general criterion laid down in the Foreign Investment Law, according to which at least 51 per cent of the company capital of the enterprise must be in the hands of Mexican investors, is applied. Through the programmes, deadlines and procedures are established for Mexicanization of the recipient enterprises when these are controlled by foreigners;

(e) In addition, the payments in respect of patents, trade marks and technical assistance arising out of the project are regulated according to the guidelines laid down by the Law on the Transfer of Technology. The general criterion is that payments in respect of technology should not exceed 3 per cent of net sales generated by the project receiving the technical support;

(f) Other requirements of less importance are included in the programmes, such as the requirement that appropriate technical backing be provided in the manufacture and distribution of the new product in terms of service, maintenance, and repair; that an "official quality standard" be registered with the General Directorate for Standards, making it possible to regulate certain qualitative features of the product; and that the producer give other types of guarantees with respect to supply of the product.

There is no doubt that application of these rules means a considerable improvement over the traditional import-substitution system, and this is especially

true of the first three rules, which cover the most important factors determining the economic contribution of import substitutes to the domestic economy, i.e., price excess, integration and exports.

The fourth and fifth rules, which relate to foreign participation in enterprise capital and transfer of technology contracts, began to be applied before there were specific regulations on these subjects, with a view to regulating the qualitative aspects of industrial development. After the laws on foreign investment and transfer of technology entered into force, these criteria became of limited usefulness in manufacturing programmes, since they only supplement the specific machinery set up to regulate the phenomena in question, with a view to achieving coherency in State regulatory activity in the industrial sector.

The economic rationale of these criteria, especially the first three, needs to be evaluated so that conclusions may be drawn concerning the establishment of industrial priorities.

The first criterion involves a timetable for increasing the use of domestic inputs in the manufacture of the import substitute. In this way the Government puts pressure on industry to transfer its purchases of important inputs from foreign suppliers to domestic suppliers, since market forces operating in the context of the traditional import-substitution policy have failed to lead industry in this direction. The electronics industry provides an example of the strong pressure the Government has applied to achieve its goal.

For many years, the Government endeavoured to promote integration by persuasion. All enterprises produced what was easiest cases and cabinets and imported the rest. In 13 or 14 years, parts made in Mexico accounted for no more than 20 per cent of the cost of materials. Resistance by the private sector did not cease until the Government announced unequivocally that import licences would be granted only to enterprises that had genuinely attempted to achieve domestic integration. Results were not long in coming. Within approximately three years, from 1959 to 1962, a further 60 per cent of materials, in terms of cost, were being purchased from domestic sources. Enterprises found themselves compelled to seek out and stimulate domestic suppliers, and production was started of certain types of valves that in 1959 had required imports worth 44 million pesos.[57]

In this case, it was possible to progress further towards integration than in other sectors, possibly owing to the special nature of electronic inputs, which can be made subject to standard technical specifications, and to the situation with respect to competition in this industry, where product differentiation is not of primary importance. In sectors where these conditions are not present (automotive, publishing) the Government has had to press integration more forcefully by granting special incentives governed by specific sectoral programmes.

The setting of maximum price excess makes it possible to fix a limit on the cost absorbed by the country in respect of each import-substitution project. However, this limit is fixed only in relative terms, without taking into account the potential total cost of a project in the light of the volume of production. In other words, when the value of the import-substitution production is great, or is expected to increase substantially in due course, the permissible price excess must be reduced to adjust the incentive granted to the project and to regulate the total cost of the operation. Along the same lines, the initial limitations of the domestic market may justify a relatively high price excess at the outset, but as the volume of production grows and

[57] Izquierdo, *op. cit.*, p. 265.

greater advantage is taken of economies of scale, the initial price excess and the premium associated with the protection granted can be reduced.

The commitment to export encourages enterprises producing import substitutes to be efficient, since they are compelled to compete in the international market and to adjust their input demand to the country's comparative advaiitage pattern. The export programme is usually negotiated jointly with the domestic integration timetable, so that the overall impact of the project on net foreign exchange gains is considered. Thus an enterprise that achieves a high degree of integration in its production process, and consequently accounts for substantial foreign-exchange savings, will be required to export a smaller proportion of output than another enterpise with a lower degree of domestic integration.

Just as fulfilment of a large export programme ensuring that a given percentage of production will in fact meet competition in international markets is not strictly required, enterprises engaging in import substitution are not induced to make intensive use of the factors of production abundant in the country, such as labour, and to economize on those that are scarce, such as capital and foreign exchange.

Furthermore, there is no criterion for associating a decrease in incentive with increased capital intensiveness of the production process. In other words, the criteria used to evaluate manufacturing programmes do not influence the selection of technology, nor specifically stimulate the creation of jobs, one of the priority objectives for industry.

None of the criteria mentioned takes into account the general structure of demand for inputs generated by project implementation. An effort is made through the domestic integration programme to limit the direct use of foreign inputs in import-substitution projects; but owing to the lack of a suitable industrial programming framework, overall import requirements are not considered, much less the multiplier effect on demand for labour or capital arising out of interindustry linkages.[58]

For projects where a substantial proportion of the production is to be exported, the problem of evaluating the demand for raw materials used in the exports arises. Recent studies have endeavoured to demonstrate what is known as the Leontieff paradox in the case of Mexico, concluding that the country's exports of manufactured products are capital intensive rather than labour intensive, as would be suggested by the Heckscher-Ohlin theorem.[59] However, these studies do not examine the relative intensity of use of raw materials or natural resources that are abundant in the country. This applies to the exports of the chemical industry, which makes substantial use of petroleum derivatives, the iron and steel industry, mining and other branches. These considerations are also disregarded in the criteria used to evaluate manufacturing programmes, giving rise to the danger of over-exploitation of the country's non-renewable natural resources for the purpose of increasing exports of manufactured goods.

The manufacturing programme machinery also promotes vertical integration of industry at the planning level; for when the frontier is closed to permit the manufacture of a given product, especially intermediates, incentives are implicitly

[58] Input-output analysis techniques can provide these background data.

[59] See Robert W. Boatler, "Trade theory predictions and the growth of Mexico's manufactures exports", *Economic Development and Cultural Change*, vol. 23, No. 3 (April 1975), pp. 491-506; and Susumu Watanabe, "Constraints on labour-intensive export industries in Mexico", *International Labour Review*, vol. 109, No. 1 (January 1974), pp. 26-39.

granted to industries requiring this input to manufacture it directly, since in this way they ensure quality control with respect to the input they require and at the same time obtain for themselves the subsidy implicit in the protection. Investment projects by large industrial enterprises that supplement their production processes by manufacturing their most important inputs internally are very frequently found. Even where import of the machinery necessary for this new line of production is subject to the import permit requirement, the licence is usually granted on the grounds that the machinery is not manufactured in the country, with no account being taken of the existence of similar projects that already make the same input in the country. This encourages the existence of idle capacity and impedes the development of specialized suppliers of inputs.

When the manufacturing programme system is considered as a whole, one important defect becomes clear: only industrial enterprises that plan to engage in import substitution and require closure of the frontier or some other special support to make their investment profitable are compelled to comply with the programmes. Once a product has been made subject to the import permit requirement, any enterprise may manufacture it domestically without explicit permission from the Secretariat of Industry and Commerce, and hence without having to subject itself to a manufacturing programme. This means that the system penalizes the most innovative manufacturers, namely, those who initiate domestic production of an item that was previously imported. On the one hand, this system is constructive because it does not formally protect monopolies in the domestic market;[60] but on the other hand, there is no possibility of regulating the differential in the price at which the import substitutes are sold or the integration programmes for the industrial branch in question and its contribution to exports.

In addition, there is no suitable supervision and control machinery to ensure compliance of enterprises in respect of price, domestic integration, exports etc., laid down in the manufacturing programmes. Compliance is reviewed only sporadically, for example, when the enterprises subject to them approach the authorities to apply for some additional benefit or continuation of the incentives granted once the period fixed has elapsed.

Imports by the public sector

Importing by public-sector organizations, whether carried out directly or through importing enterprises, is subject to various systems of control by the Secretariat of Finance and Public Credit, the Secretariat of the Presidency, and the Secretariat of National Property. Public-sector organizations must apply for import licences when they wish to purchase goods subject to control by the Secretariat of Industry and Commerce. However, in addition, importing by public-sector organizations must be authorized by the Public-Sector Import Committee, which was set up in 1959 to subject such imports to a closer scrutiny than takes place under the licensing system.

In recent years, public-sector imports have shown considerably greater dynamism than private-sector imports, and they already account for around 40 per

[60] However, in many cases, the limitations of the domestic market permit only one plant of an adequate size to engage in the domestic manufacture of the particular import substitute. Where this is the case and where there are, in addition, no near substitutes for the product in question, manufacturing programmes do promote and protect monopolies.

cent of total Mexican imports, while in 1968 they accounted for 22 per cent. Less than 1 per cent of the applications for permission to import are rejected by the Import Committee.

Conclusions regarding instruments of protection

Import-substitution incentives, even when regulated by means of manufacturing programmes, do not establish clear-cut priorities for industrial exapnsion. Investment priorities do not, therefore, arise out of appropriate industrial programming. The initiative usually comes from the industrialist who wishes to obtain protection against foreign importers and is not based on the establishment of priorities by the State.

In addition, the proliferation of rules laid down in response to the distortions generated by the protection itself results in a case-by-case granting of investment incentives, and this makes it more difficult to apply general rules orienting the development of industry towards planned objectives.

To sum up, instruments of protection have not been used consistently to promote industrial investment in areas of priority for the country's development. The protection provides investment incentives indiscriminately, and the selective criteria applied are able to regulate only certain undesirable side effects of the investments initially selected by private investors.

Tax incentives

Tax policy has been one of the most important direct instruments for promoting the country's economic development. It has had a positive influence on industrial activity, since preferential systems are granted for manufacturing, as compared with other economic activities. Taxes are low compared with taxes not only in industrialized countries but also in countries at similar levels of development. There is no doubt that, owing to its greater relative dynamism, the manufacturing sector has benefited most from the policy of low taxes and preferential treatment for income from capital.

The main tax incentives used for purposes of industrial promotion are described below. They are classified according to the objectives of the various tax incentive schemes, in particular export promotion, the establishment and expansion of industrial enterprises, industrial decentralization, reinvestment of profits and the promotion of specific branches of activity.

Incentives to promote exports

Until the end of the 1960s, three instruments were used to promote exports by fiscal means, namely, the so-called triple subsidy, the temporary operations system and the programme of the *maquila* industry (see below). These systems were changed substantially in 1971 as part of the overhaul of the policy for promoting exports.

The main device is the refund of indirect taxes, including import duties, to exporters of manufactured goods. Through this arrangement, the exporter is reimbursed the indirect taxes levied on the product and its inputs under terms in keeping with the GATT agreements, so that countervailing duties are not placed on

Mexican exports by other countries. The reimbursement covers duties on the import of the raw materials if the exporter does not avail himself of the temporary import system described below. In addition, refund of a further 4 per cent is granted if goods are exported through export consortiums approved by the Secretariat of Finance.

For purposes of refund of taxes, the Secretariat of Finance has established tax refund certificates (CEDIs), which are non-transferable, valid for five years, and may be applied only towards the payment of certain federal taxes. Indirect taxes are also refunded to industrialists in respect of sales in the free zones on the northern frontier of the country to encourage competition by industrialists in those consumption centres that have traditionally been supplied by imports.

The temporary operations system has the goal of promoting exports through better utilization of installed industrial capacity. Full exemption from import duties on foreign inputs used in the manufacture of export products is granted when the product to be manufactured is at least 40 per cent of domestic origin, in terms of manufacturing costs.[61]

The system applicable to the *maquila* industry exempts from import duties on foreign materials, parts and components acquired by *maquila* industries for processing or assembly and subsequent re-export. *Maquila* operations for export are defined as those carried out by enterprises using temporarily imported machinery that export all their products no matter what share of their manufacturing cost may be domestic. Up to now most of the *maquila* industries have been subsidiaries of North American enterprises set up mainly along the northern frontier of the country because the relevant tax system applied only to a strip 22 km wide in that area. Since 1972, the advantages provided for under the *maquila* system have been granted to industrial plants anywhere in the country. Products manufactured under this system may be sold in the domestic market provided that they take the place of imports or are used as inputs for exports.

In addition, a subsidy of 25-50 per cent is paid towards railway freight charges for the transport of products manufactured in the interior of the country that are shipped by the manufacturer to the northern frontier or to the free zones either for consumption in the zone or for export.

Other tax incentive schemes are applied to certain industrial branches, including the automotive industry and, more recently, the publishing industry, as part of the special schemes for supporting these activities. The export incentives for these special sectors are similar to those provided for by the general systems described, and there are special procedures for granting them.

Incentives to establish and expand industrial enterprises

Up to 1972, the main tax incentive for establishing and expanding industrial enterprises was provided by the Law on the Promotion of New and Necessary Industries promulgated in 1955. The Secretariat of Industry and Commerce and the Secretariat of Finance and Public Credit are responsible for its execution.

Although the Law has been declining in significance owing to the enhanced importance of measures to promote the decentralization of industry, it is still useful to consider its provisions because it represents the most complete example of the

[61] The domestic cost of manufacture is calculated by adding together the value of domestically produced inputs, wages paid and depreciation of fixed capital

application of selective criteria in granting industrial investment incentives, criteria that have, furthermore, been adopted in applying instruments created subsequently.

The incentives provided for by this Law are granted only to "new" or "necessary" industries. "New" industries are those engaging in the manufacture of goods hitherto not produced domestically, provided that these are not mere substitutes for other goods already being manufactured. "Necessary" industries are those whose production is inadequate to meet domestic demand, provided that the deficit is substantial and is not due to transitory causes.

The provisions referred to indicate a clear orientation towards import substitution without taking account of the potential economic significance of each project. Little importance is paid to the generation of suitable levels of domestic competition and inducements to technological change, since enterprises producing substitutes for goods already being manufactured and competing with already established industries through price, quality and more advanced techniques are not promoted.

A secondary classification is used to determine the duration of the exemptions granted. Tax exemptions are granted initially for periods of 10, 7 or 5 years, depending on whether the enterprise in question is considered basic, semi-basic or secondary. In addition, the competent authorities may, at their discretion, grant extensions or renew exemptions for a maximum period of five years, but only to industries classified as basic or semi-basic.

Basic industries are those producing raw materials, machinery, equipment and vehicles essential to one or more activities of fundamental importance for the industrial and agricultural development of the country. Semi-basic industries are those producing goods intended directly to meet essential needs of the population, as well as those producing tools, scientific apparatus or items that may be used in subsequent processes in other important industrial branches. Secondary industries are those manufacturing items not covered by the other headings. These definitions do not indicate what is to be understood by "activities of fundamental importance" for industrial development or "important industrial branches". As the incentives are granted on a case-by-case basis, priority industrial branches are not explicitly indicated either by the law or by the competent authority.

Two additional criteria for granting the exemptions established by the Law are that inputs of domestic origin should account for at least 60 per cent of direct manufacturing costs and that the degree of processing or value added in the plant should amount to at least 10 per cent.

These criteria confirm the tendency already mentioned to promote import-substitution industries, emphasizing the manufacture of inputs for which substitution is difficult. The mechanism provides for a greater incentive for industries using large proportions of domestic inputs, thus promoting vertical integration at the plant level, which is usually very costly for the industrial structure and prevents advantage from being taken of the economies of scale that could be achieved through specialized manufacture of inputs for all industrial users. In addition to the emphasis on import substitution, this machinery shows a clear orientation towards indiscriminate diversification of industrial production.

The Decrees on Industrial Decentralization (see below) take over virtually all the criteria used in the manufacturing programmes, which have already been discussed. Some of the most important are the provision that Mexican participation in the company capital of the enterprise must be at least 51 per cent, the limitation of

payments abroad in respect of royalties etc., to 3 per cent of net sales; and a price range to which the new production must be adjusted, related to prices in the international market.

In addition, a level of at least 60 per cent of domestic content in direct manufacturing costs must be achieved; and the competent authority may impose a limitation on the amounts of foreign credit contracted by the enterprise and the interest to be paid on that credit. These provisions reinforce the orientation of protectionist devices towards achieving the maximum possible degree of domestic integration by limiting the coverage of incentives to enterprises that have achieved an integration level of at least 60 per cent. The regulation of foreign credits, on the other hand, is an innovation in this field, it is intended to prevent foreign participation in Mexican companies from exceeding the maximum level of 49 per cent that is formally laid down in most cases and, at the same time, preventing benefits granted through tax incentives from being withdrawn from the enterprise through interest payments.

In granting of tax incentives to promote exports of manufactured goods, primarily in the form of tax refund certificates, account is taken of factors relating to the structure of enterprise capital, acceptable domestic supply of the products to be exported, contribution by the project to the balance-of-payments situation and the degree of utilization of domestic inputs in production. No quantitative criteria are fixed for the application of these requirements, except as regards the amount of domestic manufacturing of the products to be exported. The full refund provided for is granted in respect of products that achieve a domestic content of at least 60 per cent; the refund is 50 per cent when the products have achieved a domestic content of between 50 and 59 per cent.

Although the relevant law specifies that, for purposes of granting the tax refund, the Secretariat of Finance "shall take into account the capital structure of enterprises", in practice enterprises with majority foreign capital do not seem to have been discriminated against. However, this provision makes it possible to deny support to enterprises the Secretariat of Finance and Public Credit does not regard as enterprises with Mexican majority capital. Thus a high degree of discretionary power is reserved for the competent authorities in granting incentives, and emphasis is placed on domestic integration of industrial production, even for exports.

Incentives to promote industrial decentralization

The country's industrial development has shown a marked tendency towards geographical concentration. In 1970, the Federal District and the four most highly developed federal entities generated around 68 per cent of the industrial product, employed 61 per cent of all persons holding jobs in industry and accounted for 62 per cent of the gross fixed assets in the country. This growth pattern was encouraged by various factors, including, in addition to geographical and historical accidents, pursuit of a policy of import substitution for consumer goods, applied in the initial stages to promote industrialization, which encouraged the location of large industrial enterprises in the main urban centres of consumption; the practice of subsidizing the supply of basic inputs and public services; and the assignment of excessive priority to infrastructure programmes in the country's main manufacturing areas

Since no requirements regarding geographical location of enterprises were attached to the granting of tax incentives, the industrial growth pattern continued unchanged. In the early 1970s, however, two decrees were promulgated with the goal of counteracting the economic forces that generated the excessive concentration of industry.

The Decrees on Industrial Decentralization and Regional Development of 25 November 1971 and 20 July 1972 declare the establishment and expansion of industrial enterprises in economically underdeveloped regions and granting of incentives to such enterprises to be in the public interest.

The incentives provided for in the decrees are granted to industrial enterprises when they are established in a municipality for the purpose of engaging in a new activity or taking advantage of regional resources; they invest the income from the sale of real estate in the establishment or expansion of industrial enterprises in the less developed zones of the country; they engage in an activity that is new in the country; they fill a gap in supply, where the shortfall was at least 20 per cent in the previous year; they are expanding their production capacity; they are rationalizing their production and increasing their productivity; and lastly, they are of particular importance to the economy.[62]

The beneficiaries may enjoy exemption from taxes to varying degrees and for varying lengths of time, depending on the location of the enterprise, the national or regional economic importance of the activity or the degree of rationalization of production. The incentives and assistance are granted for periods of 3-10 years, on the basis of fulfilment of the criteria listed above.

Obviously, the basic criterion for granting exemptions is the location of the enterprise, and preferential treatment is granted to relatively less developed areas. On the basis of this principle, the country has been divided into three zones. Zone 1, which is relatively built up and developed, covers the Federal District, Monterrey and Guadalajara and the surrounding townships. Zone 2 covers some of the townships in the neighbourhood of the urban and industrial centres in zone 1 and four moderately built-up cities. Zone 3, whose development has a high priority, comprises the rest of the national territory.

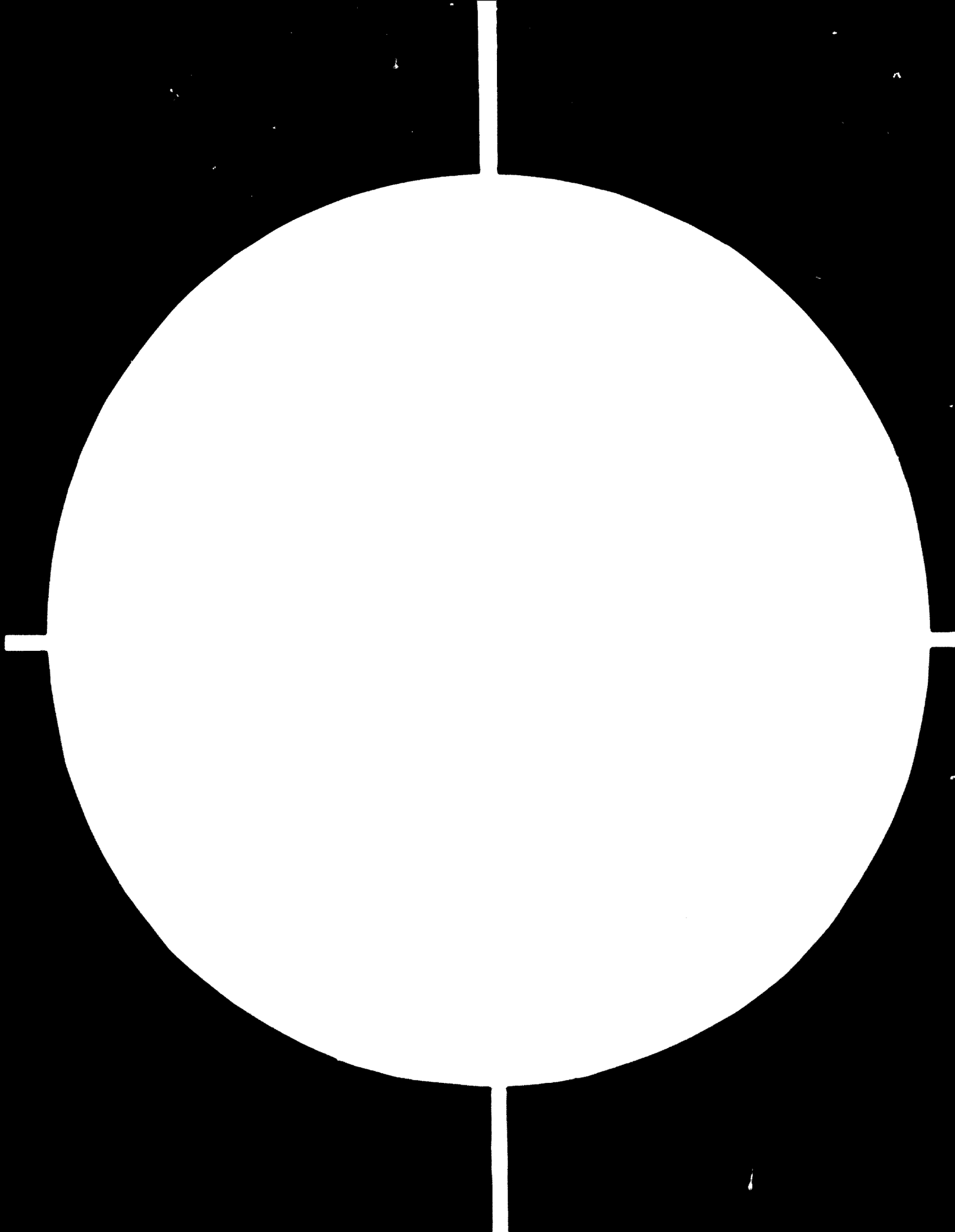
In addition to the general incentives to decentralize, specific incentives relating to deconcentration were subsequently offered to *(a)* enterprises that play a part in developing industry, fisheries, forestry and tourism in the Tehuantepec Isthmus; and *(b)* small-scale and medium-scale industry on the northern frontier and in the free zones.

Reinvestment incentives

To encourage savings and the formation of domestic capital for industrialization several tax measures were introduced, including tax exemptions. Trading companies are authorized to form reserves out of their taxable profits, in percentages fixed by the Secretariat of Finance, and the relevant tax exemption is automatically granted in these cases. Specifically, with regard to the promotion of investment in machinery and equipment, the incentive consists in an increase in deductions from the taxable profit with a view to accelerated depreciation of company assets.

[62] The additional conditions that enterprises must fulfil to enjoy the exemptions provided for are basically the same as those laid down in the Law on New and Necessary Industries.

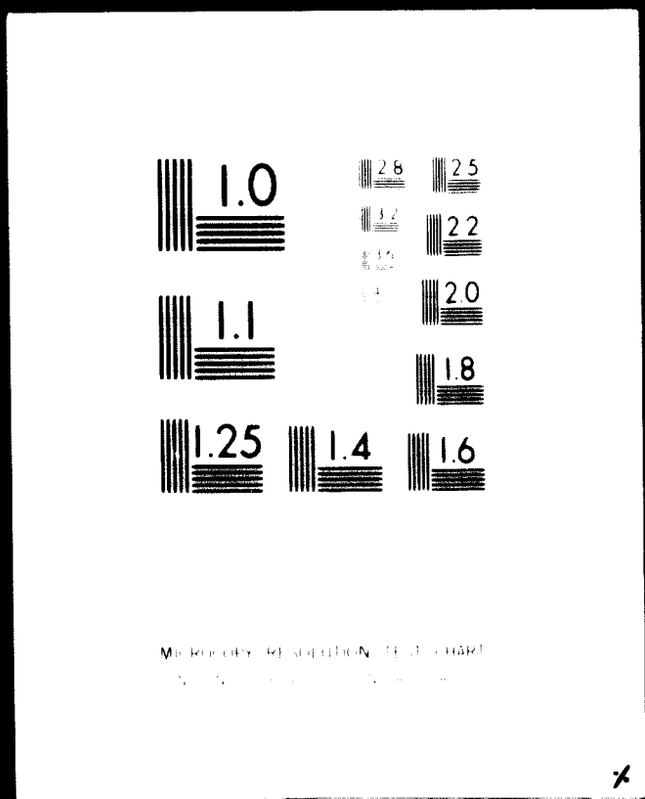
C-623



2 OF 3

09162 -

09167



24x

D

Incentives for specific branches

Measures have been adopted to stimulate and regulate growth of specific branches of activity, chief among which are the automotive, soft drink and publishing industries.

Since 1962, the State has attempted to promote the development of the automotive industry. The most recent decree (1972) has the specific goal of increasing employment in the sector, establishing a satisfactory pattern of vehicle supply, increasing exports and reducing imports of automotive industry products, and increasing the share accounted for by Mexican capital in automotive parts manufacturing.

As regards the soft drinks branch, a subsidy was established in December 1974 for small enterprises using trade marks, preferably national ones, belonging to Mexican individuals or companies, as a means of protecting domestic bottlers from the competition of the large transnational enterprises that have traditionally dominated this sector in Mexico. The subsidy applies only to trade marks that are the property of Mexican individuals or companies and are not linked with foreign brand names, symbols, emblems or the names of persons. To qualify for a subsidy, the enterprise must use domestic inputs in the manufacture of the products for which the application has been submitted, and should not make payments abroad in respect of royalties, technical assistance, use of trade marks etc.

To promote the development of the Mexican publishing industry and the related graphic arts branch, a consultative body with wide-ranging promotion and regulatory powers in this field was set up in 1975. Some of its functions are to bring the trade balance of the sector into balance through regulation of imports and import substitution in respect of paper intended for the industry's use and through the preparation of export and international trade programmes; to make proposals for establishing industrial plants for paper production; and to grant incentives, assistance and facilities to enterprises publishing, printing and binding books and booklets.

Financial instruments

Partly because of factors characteristic of a developing economy, monetary policy in Mexico is a more effective instrument than tax policy for promoting economic growth. These factors have also tended to orient this policy primarily towards regulating the availability of credit, rather than variations in its cost, through qualitative controls. To meet industry's financial requirements, monetary authorities have used indirect and direct machinery for developing industrial activities.

Compulsory reserve rate

Since 1936, the main instrument used by the central bank to exercise its regulatory powers has been variations in the compulsory reserve rate. After 1948, a number of measures concerning the use of bank assets were added to this machinery, and these constituted the beginnings of selective credit controls.

To date, the compulsory reserve rate has undergone many adjustments, and its coverage has been expanded. At present, deposit and savings banks, finance companies and mortgage companies must keep reserves in cash and securities at the central bank. The amount of these reserves varies on the basis of certain criteria, i.e.,

the type of institution, the origin of the funds, the due date of liabilities or deposits and the use of credit.

Through this instrument, together with other means at its disposal, the Banco de México establishes standards of priority in the granting of finance by the banking system to the various branches of economic activity. None the less, since credit controls have been insufficiently selective, thus giving rise to "an assignment of financial resources that is to some degree incompatible with the priorities of industrial development policy",[63] the State has established certain direct financial promotion measures.

Direct financial support

Industry, and especially medium-scale and small-scale industry, encounters various internal and external problems in its efforts to obtain the finance it requires for its development. The internal problems include shortcomings in organization and production, lack of financial planning and ignorance of available sources and types of finance. Among the external problems are conditions in the finance market, which is oligopolistic in structure, and credit policies applied by finance institutions involving market segmentation or price discrimination, which made credit expensive and difficult to obtain.

To solve these problems, the State has established machinery for granting credit under special conditions to industrial enterprises it wishes to promote at various stages, from planning of the project to production and distribution of the goods.

At present, for this purpose several public funds have been set up by the Secretariat of Finance in the legal form of trusts.[64] These funds are mainly administered by Nacional Financiera (NAFINSA) or the Banco de México.

The National Fund for Pre-investment Studies (FONEP), established in January 1968 and placed under the administration of NAFINSA, has as its primary goal the financing, promotion and evaluation of technical, economic and financial feasibility studies in both the public and private sectors, without distinction according to economic activity.

As of August 1974, FONEP had granted credits of 141.9 million pesos. Of the 82 transactions authorized, 60 per cent related to industrial projects, 15 per cent to agricultural surveys, 18 per cent to studies for service enterprises, 2 per cent to forestry projects and the remaining 5 per cent to general studies and lines of credit to financial institutions.

NAFINSA has promoted the establishment of Joint Revolving Funds for Pre-investment Studies in each subdivision of the country since June 1971 to give impetus to the development of industrial activity in the states and regions. Some of the criteria followed for selecting projects are: utilization of natural resources, creation of jobs, contribution towards improving the balance of payments, export promotion or import substitution and effect on the prices of end-products. The project sponsor bears the cost of pre-investment studies for highly feasible projects, while the Fund bears these costs for projects that do not exhibit the minimum feasibility required.

[63] NAFINSA-ECLA, *La Política Industrial en el Desarrollo Económico de México* (Mexico City, 1971), p. 304.

[64] The trust *(fideicomiso)* is an institution through which its founder transfers to the trustee the goods and rights constituting its property so that the trustee may fulfil the purposes explicitly indicated by the founder of the trust.

The purpose of the National Industrial Development Fund (FOMIN), which was set up in 1972 and placed under the administration of NAFINSA, is to back up the establishment of new industrial enterprises or the expansion and improvement of existing enterprises by providing part of the company capital from the Fund itself on a temporary basis, or by channelling financial (capital stock) resources from credit institutions to the enterprises.

The nature, terms and purposes of contributions from both sources are the same. The share of enterprise capital provided may be as much as 33 per cent. The capital must be minority capital and is provided on a temporary basis to give financial backing to companies passing through difficult initial or expansion stages without taking the place of private initiative. Once the difficult stages are past, FOMIN sells its share, giving priority to the original investors or, failing that, to investors in the region. Where credit institutions have a share in enterprise capital, FOMIN can guarantee these the possibility of purchasing its investments.

The main criteria according to which FOMIN evaluates industrial projects it contemplates backing are contribution to regional development and industrial decentralization, the creation of jobs, and contribution to the balance-of-payments situation.

As of August 1974, FOMIN had sponsored the subscription of capital for 117 enterprises. This backing involved commitment of 249.2 million Mexican pesos[65] of the Fund's resources, which in turn mobilized a further 318.7 million pesos in additional investments by the other shareholders and 248.4 million pesos in the form of credits.

The Guarantee and Development Fund for Medium-Scale and Small-Scale Industry (FOGAIN), which has been operating since 1954 and is administered by NAFINSA, is primarily intended to back enterprises with a net worth of 25,000-25,000,000 pesos by providing them with credits on preferential terms with respect to amount, cost and repayment period. The backing provided to these medium- and small-scale industries is important in view of the large share they hold in total industry. Industrial establishments in this category recently accounted for 64.6 per cent of all industrial establishments. They generated 73.4 per cent of production and 69.8 per cent of the total capital invested in industry and employed 83.2 per cent of the population economically active in manufacturing industry.

The Ninth Industrial Census showed that in 1970, small establishments provided employment for more than 55 per cent of the total industrial work force and accounted for 42 per cent of the industrial value added. The average annual wage paid was 10 per cent less than that paid in large-scale industry, while interest payments on loans, as a percentage of total assets, were 50 per cent higher than in large-scale industry. The interest rates charged by FOGAIN vary depending on the location of the enterprise, as laid down in the Decree of July 1972 for the promotion of industrial decentralization: 11 per cent for zone 1, 10 per cent for zone 2 and 9 per cent for zone 3. Furthermore, the Fund is empowered to guarantee loans granted by credit institutions to this type of industry up to 50 per cent of the total amount of the debt of an enterprise and up to 75 per cent in the case of loans up to a limit of 150,000 pesos to industry located in zone 2 or zone 3.

From the time it was set up until August 1974, FOGAIN granted 16,200 loans amounting to 4,500 million pesos to 8,500 enterprises, most of which were small (with a capital of 1 million pesos or less). The enterprises that have received backing

[65] Referred to subsequently as pesos.

from the Fund represent 11 per cent of Mexico's small and medium-sized industrial enterprises. They generate 17.1 per cent of production and provide jobs for 22.7 per cent of the economically active population employed in this sector.

For the purpose of backing up the tax machinery for the promotion of industrial decentralization, the Trust Fund for Industrial Complexes, Parks and Estates and Shopping Centres was established in 1970. The Fund, which was placed under the administration of NAFINSA, is intended to promote the establishment of enterprises in less developed zones by providing entrepreneurs with the industrial infrastructure required. It facilitates the acquisition of land and buildings for plants; provides electricity, water, drainage and communications services; and gives advice on technical, administrative and marketing matters.

The Fund for the Promotion of Exports of Manufactured Goods (FOMEX), set up in 1962, is administered by the Secretariat of Finance and the Banco de México. Its primary purpose is to promote equilibrium in the country's trade and service balance by engaging in financing of sales, pre-export financing, the granting of guarantees on export credits and backing for import-substitution industries.

Sales financing covers the financing of export sales of manufactured and semi-manufactured goods and the rendering of services abroad by Mexican enterprises. Pre-export finance relates to financing the production and maintenance of stocks of finished products for export. The granting of guarantees is aimed at protecting exporters, or the credit institutions financing them, against risks to which credits relating to exports of all types of goods or services, including raw materials, are exposed, such as non-convertibility and/or non-transferability of payments made by foreign purchasers or failure to repay the credit. Backing for import substitution in respect of equipment and installations takes the form of rediscounting or granting of assistance to cover the differential in interest rates between credits available from other sources and those that would be competitive in comparison with foreign offers.[66]

The interest rates on the credits granted by FOMEX have remained unchanged since 1963, when the maximum rates that the Fund was permitted to charge in its transactions were initially fixed. For sales credits, the maximum rates range from 6 to 8 per cent; for pre-export financing, the maximum annual rate is 8 per cent; and for import substitution the rate is fixed at a level competitive with foreign rates.

The National Fund for Industrial Equipment, which was set up in 1972 and placed under the administration of the Banco de México, is intended basically, like FOMEX, to strengthen the balance of payments. It differs from FOMEX only in the means used to achieve its aim. It earmarks its resources for promoting the establishment and expansion of industrial enterprises and services oriented towards exports and/or import substitution.

To this end, the Banco de México, which is the trustee of the Fund, grants discounts, credits and refinancing for intermediate institutions taking part in the Fund's financial backing transactions. The primary criteria taken into account by the Fund for the selection of projects to be backed are generation or savings of foreign exchange, creation of jobs, contribution to value added, industrial decentralization and regional development.

The Trust Fund for the Purchase, Sale, Rental and Transportation of Maritime and Port Equipment, set up in 1971 under NAFINSA, is intended to provide the holders of concessions or permits for federal public maritime operations services with

[66] FOMEX, *Diez Años de Apoyo a las Exportaciones 1964-1973* (Mexico City, 1974), p. 3.

the equipment and vessels to meet port requirements for maritime trade. In this way, the opening up of marketing channels is encouraged.

These special funds through which credits are granted at preferential interest rates have a more restricted coverage than the other instruments of industrial development. In many cases, they are set up to grant special backing to certain industrial sectors, such as small-scale and medium-scale industry or enterprises established exclusively for purposes of export or import substitution. In other cases, the funds are designed to finance specific activities of enterprises without distinction as to industrial branch. In general, the criteria for eligibility applied in granting financial backing reflect the principles laid down for using the other instruments of industrial development.

Thus, it is the coverage of the funds, rather than their rules of operation, that exercises a decisive influence on the establishment of industrial priorities. The implications for industrial development of the granting of preferential credits to certain industrial sectors or activities must also be considered. Credit backing has proved to be an important incentive to the expansion of economic activities, including agriculture, owing to the manner in which the financial system operates in Mexico. Despite the rapid growth of banking, especially in the last decade,[67] the granting of credit has tended to be concentrated on modern, large enterprises[68] for considerations of safety more than of profitability. Small enterprises and those engaged in traditional activities, however, encounter serious obstacles in obtaining credit, and when they do so they are compelled to take it on more onerous terms than credit recipients who offer better guarantees.

In this situation, special funds not only serve as a subsidy to the beneficiary[69] but they also often represent a channel for access to bank credit, which is particularly valuable during a credit squeeze or when credit is rationed. Furthermore, the funds enjoy flexibility in their operations, since, as trusts, they are permitted to tailor their operating rules to the specific conditions in the market in which they are specializing.

However, the question remains whether this credit support does not encourage capital intensiveness by granting subsidies through financing, and whether it would not be more efficient to grant direct support for production or to make the amount dependent on relative labour intensiveness to offset the existing bias against the absorption of labour in the industrial sector.[70] In any case, what must be stressed here is that there are no clear-cut criteria for granting financial support that would prevent it from exercising a negative influence on the selection of technology, and the consequent orientation of the recipient sectors towards mechanization of their production. It is important to perfect this machinery for financial backing to industry to ensure that the relative advantages of the sectors judged to have priority on the basis of their levels of absorption of labour, savings of foreign exchange etc. shall be maintained.

---

[67] D. Brothers and L. Solís, *Mexican Financial Development* (Austin, Texas, University of Texas Press, 1966), pp. 144-151.

[68] For 1974, a study made by Armando Ortega for Banco Internacional calculated that 50 per cent of the credit went to 1 per cent of the recipients.

[69] FOMEX credits on export sales represent a significant subsidy, since the interest rate applicable on six-month credits is 6-8 per cent, while the market interest rate is 15-18 per cent.

[70] See Saúl Trejo Reyes, *Industrialización y Empleo en México* (México City, Fondo de Cultura Económica, 1973).

Price regulation

On the basis of the authority vested in it by a number of constitutional provisions to regulate production and distribution in branches assigned priority for economic or social reasons,[71] the Government has followed a policy of fixing maximum wholesale and retail prices in some of these sectors, above all in agriculture. To strengthen domestic measures adopted to combat the persistent domestic inflation, a new system of price control and regulation was established in October 1974. This system links variations in prices of products subject to control by the Secretariat of Industry and Commerce to fluctuations in their production costs.

Enterprises may be exempted from price fixing on the basis of cost fluctuations if the Secretariat finds that an exemption is justified by the volume of their sales, their relative importance in the branch, their geographical location or other factors.

Influence of public-sector enterprises on setting of priorities

Industrial enterprises belonging to the public sector influence the determination of industrial priorities in two ways. First, the direct investment decisions they make shape the evolution of industry in the branches they control or direct. However, perhaps more important, the very operation of public enterprises, through their production, distribution, price and other policies, provide incentives to private investment and thereby establish industrial priorities.

An analysis of direct State participation in industrial production shows that the sectors in which the Government participates directly as a producer have been selected on the basis of many criteria.

The main reasons for direct State participation in industry are:

(a) To control industrial branches considered strategic for ensuring the autonomy of domestic decisions on industrial development. This explains the Government's control of the petroleum industry, generation of electricity and the railways, which has resulted from the nationalization of foreign enterprises;[72]

(b) To supplement efforts by private initiative in fields of investment which, owing to their magnitude, are beyond the reach of private investors or have been given inadequate attention, as is the case in the paper and iron and steel industries;

(c) To support agricultural activities, as a necessary supplement to agrarian reform, in areas such as supply of basic industrial inputs and the processing of rural products, an example of the former being fertilizer production and of the latter the manufacture of vegetable oils and other derivatives and sugar mills;

(d) To maintain in operation important sources of jobs, which, owing to the failure of private enterprises, may disappear, as has been the case with many sugar mills acquired by the public sector, several plants in the metalworking and engineering industry and some textile enterprises;

[71] Foodstuffs and clothing for general consumption or use; industrial raw materials; products of the basic industries; and services that contribute to the development of activities in these fields and for which rates are not laid down.

[72] Miguel Wionczek, *Inversión y Tecnología Extranjera en América Latina* (Mexico City, Joaquín Moritz, 1970), pp. 22-29 and pp. 136-166.

(e) To supply the public sector itself, which as a result of its own development generates demand for inputs that can be met directly by enterprises with State participation. Examples are plants in the military supplies industry, publishing and some capital goods enterprises.

The current pattern of direct State participation in industrial activities does not indicate that a coherent set of criteria has been adopted to govern the policy relating to direct public-sector investment, but rather that investment decisions are made in response to concrete situations, and the only factor that has remained unchanged is the State's policy of considering its investments to be irreversible. In other words, once the decision has been taken to acquire a majority share in some enterprise, the investment has been consolidated, and the enterprise concerned has in no case been returned to private investors.

In recent years, the need for industrial investment policy for the public sector that will make it possible to programme direct State participation in industrial activities has frequently been stressed. In 1975, the Co-ordinating Committee for Public-Sector Industrial Policy[73] was set up and made responsible, *inter alia*, for "fixing and programming industrial policies for the public sector through the establishment of priorities for the execution of new industrial projects or projects relating to the expansion and growth of existing activities", and for analysing, evaluating and, where appropriate, approving any new industrial projects for expansion of federal bodies, semi-autonomous organs, State enterprises and enterprises with State participation.[74] The functioning of this Committee will have to be observed for a while before more comprehensive conclusions can be drawn regarding the establishment of priorities for the execution of industrial projects by the public sector.

However, from the evaluation of investment projects that precedes the authorization of the public investment budget some of the general guidelines can be identified. Apart from the factors of feasibility and financial profitability, which are assessed by the usual project evaluation methods, shadow prices for some important inputs, such as foreign exchange, capital and labour, are used to evaluate the social costs and benefits of projects, although specific values are not indicated. In a memorandum issued by the Directorate for Public Investment, in reply to an inquiry from a semi-autonomous enterprise on the proper use of shadow prices, it was stated that it was inadvisable to indicate specific values for shadow prices, since that might lead to a mechanical and erroneous evaluation of projects; evaluations should be therefore made on a case-by-case basis, taking into account the many qualitative factors that cannot be quantified.

It is not surprising that the use of fixed parameters for evaluating very diverse projects submitted is avoided. However, some of the principles that have been adopted in the use of shadow prices are given as examples. The scarcity and high productivity of foreign exchange must be taken into account by adding to the cost of the imported content a correction value, which may in some cases amount to as much as 50 per cent. As regards the opportunity cost of capital, real discount rates of 10-15 per cent are indicated, in addition to the correction for inflation considered

[73] The Committee is chaired by the Secretary of National Property, and permanent members are the Secretaries of Finance, Industry and Commerce and the Presidency, as well as the Directors-General of Nacional Financiera, SA and the Sociedad Mexicana de Crédito Industrial, SA.

[74] *Diario Oficial*, 7 July 1975.

necessary during the life of the project. Lastly, in the case of unskilled labour, in view of its relative abundance, a social cost lower than minimum legal wages should be assumed.

The use of these social cost criteria indicates that, through technical evaluation of public investment projects, it is sought to bring direct public-sector investment decisions into line with industrial policy objectives, especially as regards the ability of industry to generate jobs and the rational use of capital and foreign exchange. However, observation of investments actually made shows that technical and economic evaluation of investment projects constitutes only one part of decision making relating to public investments, the planning and final implementation of which have depended on the current economic situation. In other words, government criteria for making public-sector investment have not been consistent over time, and thus the State's direct investment policy has not been an important vehicle for indicating investment priorities in the industrial sector.

If direct State participation in industrial activity is closely scrutinized, it is seen that the means of generation and distribution of goods and services produced by the public sector is more important for the establishment of industrial priorities than the investment decisions.

Although a detailed consideration of the operations of industrial enterprises in the public sector would exceed the limits of this study, a brief mention of the price policy the largest State enterprises producing basic industrial inputs have followed is useful for two reasons. First, by supplying basic inputs such as petroleum and electricity and rendering transport services, these enterprises can exercise a decisive influence on industrial activities; and, secondly, it is in the sphere of prices of these inputs that a distinctive approach on the part of the major public enterprises has been observed. In other words, the price policy of these enterprises would be different if they were controlled by private businessmen.

It has already been established that the stabilizing development strategy ensured a high return on private investment, as well as domestic price stability, through a policy of fixed prices for energy and transport as well as other factors supplied by State enterprises. The prices of these inputs being dissociated from their marginal costs, several distortions arose in the assignment of resources, especially in those industrial branches requiring large amounts of energy in their production processes. A glance at the large subsidies granted to specific enterprises in respect of the supply of electric power, for example, suggests that the establishment and expansion of some enterprises were artificially promoted – as well as the lavish use of energy.

This policy of fixed prices has also affected industrial activity indirectly. The poor income-generating capacity of public enterprises has meant, for one thing, that these enterprises have had to make considerably greater use of external sources of finance than have private enterprises,[75] competing with advantage in the domestic money and capital market, to the detriment of other economic activities, and, for another, that the reinvestment capacity of public industrial enterprises has been for a long time quite limited, causing delays in investment programmes, which frequently result in bottle-necks in the supply of some products or services. The subsequent acceleration in programmes for increasing the production capacity of some public enterprises has resulted in cost increases and high levels of imported content.

This price policy has been revised in recent years, with sizeable increases in electric power and railway freight rates and in the prices of petroleum derivatives and

[75] NAFINSA-ECLA, *op. cit.*, pp. 305 and 306.

other goods and services It would be desirable for the prices of these inputs supplied by the public sector to be adjusted fairly frequently in future, so that they will closely reflect increases in their production costs.

Effects of policy on setting of industrial priorities

Mexican industrialization policy, with its foundation in import substitution through protectionism, has followed a traditional pattern. It began with the substitution of finished consumer goods of simple manufacture and gradually progressed into areas requiring increasingly complex production techniques. The policy of protection for non-durable consumer items was accompanied by a liberal policy with respect to imports of capital goods and raw materials, the result of which was a very high level of effective protection for consumer goods production. This policy had a significant impact on the balance of trade: the percentage of non-durable consumer items within the total volume of imports declined, and imports of machinery and equipment increased correspondingly. For the years 1940, 1950, 1960 and 1970, non-durable consumer goods accounted for 14, 13, 6 and 5.4 per cent, respectively, of the total volume of imports, while the share of machinery and equipment in 1950, 1960 and 1970 was 23, 31 and 36 per cent, respectively. The relative weight of consumer durable imports has also decreased. In more general terms, the share of consumer goods decreased from 28 to 16 per cent during the period 1940-1970, while that of capital goods and intermediate products increased from 27 to 50 per cent.

It is difficult to pass judgement on the traditional infant industries argument, by which it is possible to justify temporary protection aimed at obtaining a market of sufficient size to enable import-substitution industries to benefit from economies of scale and set the stage for dynamic economic development. The underlying assumption is that, over time, industrialists acquire greater expertise and introduce technological innovations and improvements that will make the industry internationally competitive. However, the "infant industries" in Mexico generally do not reach "maturity", and in no instance have quantitative import restrictions been abolished, even though in accordance with the rule of limited duration permits may be granted for periods of not more than three to five years.

Certain of the sectors of the economy in which growth has been most dynamic are those that have enjoyed the highest levels of protection, but this rapid growth has not been accompanied by satisfactory progress in technology and adaptation, with the result that, to continue to encourage these industries, the degree of effective protection has had to be maintained or increased. Moreover, the same industrialists who have developed their operations behind this protectionist barrier have now become an important pressure group in favour of maintaining the *status quo* in this area.

Protection has helped to foster the emergence of an industrial class and has made it possible for industrial development to get under way, but not without occasioning high economic costs and giving rise to a system of production whose internal dynamics are difficult to control.

Distortions in the goods market

Anti-export bias

As a result of industrial protectionism, activities involving the export of goods and services became less attractive, since exporters had to use national inputs of steadily rising cost while the price of exports remained set by the world market.

This pronounced anti-export bias can be seen in an effective implicit protection rate of −5 per cent for export activities, in marked contrast to a rate of 39 per cent for import-substitution industries.[76] As a consequence, it is not surprising that exports of manufactured goods account for less than 4 per cent of domestic manufacturing, an extremely low proportion, in terms of the degree of industrial development achieved, when compared with other developing countries.[77]

The rate of inflation in Mexico, which is higher than in the United States of America, has helped to increase the overvaluation of the exchange rate, thus adding one more disincentive to export.[78]

Anti-agricultural bias

In addition, industrial protection has led to a bias against the primary sector owing to a deterioration in the terms of trade between agriculture and industry and also to increases in the prices of agricultural inputs from the industrial sector, as well as a rigid policy of guaranteed prices for agricultural products. This anti-agricultural bias has been partially offset by federal investments in irrigation projects, a policy of subsidizing fertilizer and scientific research. Nevertheless, these measures have not fully compensated for the discrimir tion from which the primary sector has suffered for some time. Gerardo Bueno has calculated that in 1960 effective implicit protection for primary production amounted to 1 per cent as against more than 20 per cent for manufacturing.[79]

Exports of primary products have been the most severely affected by the industrialization policies. In 1960, the rate of effective protection for these products was, at −7 per cent, among the lowest.[80]

The change in the structure of the production system that has come about because of the industrialization policy and that has taken the form of a channelling of production resources away from agriculture, exports and other sectors towards import-substitution industry has entailed an economic cost in that it has altered the patterns of investment and resource allocation and diverted funds from activities in which they would make a greater contribution to social well-being. Tariff protection has caused a gap to develop between the social and private benefits of industrial investment and production because the efficacy of industrialization as a means of creating and transmitting technological change has been exaggerated, as well as its ability to provide jobs for underemployed labour. The costs of industrialization stem from production costs that are higher than those prevailing internationally, and higher prices paid by the users of industrial inputs and the consumers of finished products.

[76] See Gerardo Bueno, "The structure of protection in Mexico", *op. cit.*, p. 198, table 8.10.

[77] See Bela Balassa, "Patterns of economic structure, growth and trade" in B. Balassa and others, *op. cit.*, p. 29, table 2.1.

[78] See Gerardo Bueno, "La paridad del poder adquisitivo y las elasticidades de importar y exportar en México", *El Trimestro Económico*, vol. XLI (2), No. 162 (April-June 1974), p. 313.

[79] See Gerardo Bueno, "The structure of protection in Mexico", *op. cit.*, p. 190, table 8.8.

[80] *Ibid.*, p. 198, table 8.10.

Artificial monopolistic power

The principal cost connected with static inefficiencies resulting from industrialization policies has not consisted in the effect of tariffs *per se* but in the monopoly power granted along with the protection. The policy of "closing the border" to products it is desired to protect has encouraged the emergence of domestic monopolies, particularly when a few plants are sufficient to supply the national market.[81]

Joel Bergsman, in comparing the effects of the commercial policies of six countries, including Mexico, draws a distinction between allocative inefficiency and other forms of inefficiency.[82] He notes that commercial protection permits higher prices, which are attributable to unavoidable higher costs, avoidable higher costs and monopolistic returns. In this last case, goods are produced at costs closer to internationally prevailing rates than those made possible by tariff or commercial protection, but this circumstance is exploited to maintain excessively high wages and salaries or profits. Bergsman's calculations indicate that, as in other cases, allocative inefficiency is not pronounced and that inefficiency either of a technological nature or due to monopolistic distortions is more serious. For Mexico, he finds that the cost in national economic well-being due to protection is 2.5 per cent of GNP, divided, significantly, into 0.3 per cent attributable to allocative inefficiency and 2.2 per cent almost eight times as much attributable to technological and monopolistic inefficiency. This points up how the absence of competition permitted by the commercial policy leads to monopolistic profits and avoidable production costs.

Imbalances between industrial branches

The industrialization policy hitherto pursued has promoted the development of certain branches of industry beyond what is desirable. The level of protection has risen markedly, which has favoured branches producing finished consumer goods and discriminated against those manufacturing capital and intermediate goods. Protection has been extended to the consumer goods industry at the expense not only of the primary sector, but also of certain branches within the industrial sector itself. One result has been the inadequate development of the capital goods industry.

The rise in protection has been defended on the grounds that it implies an equal rate of effective protection for the various branches of industry; this is true, however, only in the rare situation where the production process consists of a linear chain, that is, when only that input that has been produced at the immediately preceding stage is employed at each succeeding stage of the production process.[83] As a result, the protectionist structure has generated additional costs in well-being by introducing distortions in investment and labour productivity in different branches of industry.

---

[81] In a small country faced with predetermined international prices the existence of a tariff does not, in itself, create monopoly power, even if there is only a single producer to supply the local market.

[82] Joel Bergsman, "Commercial policy, allocative efficiency and X efficiency", *The Quarterly Journal of Economics*, vol. LXXXVIII (August 1974), pp. 409-433.

[83] Harry G. Johnson, "The theory of tariff structure, with special reference toward trade and development", in his *Aspects of the Theory of Tariffs* (Cambridge, Mass., Harvard University Press, 1972).

Inefficiency in the distribution of licences

The approval of import applications on the basis of a great many *ad hoc* criteria has led to considerable inefficiency for lack of a mechanism (for example, competitive public bidding for licences) to ensure that the licences shall be granted to the most efficient businessmen. The possibility of dispensing import permits in a discretionary manner has created opportunity for monopolistic gains, with the result that real resources are channelled into competition for the acquisition of permits. This has resulted in another cost in well-being, in addition to that occasioned by the implicit equivalent tariff. Moreover, the discretionary distribution of licences instead of their sale to the highest bidder has resulted in loss of government revenue and in a less efficient system of foreign-exchange allocation than if tariffs were used instead of quotas.

Distortions in the factors market

The application of industrial priorities has almost without exception contributed to reducing the cost of capital services in comparison with those of labour.[84] This policy has tended to keep the price of capital lower than it would have been if effective protection for capital goods were as high as that for other imports; thus market prices fail properly to reflect the country's relative resource endowment.

The protectionist policy has had the effect of subsidizing imports of capital goods through lower effective tariffs than for other imports and through generosity in the granting of import licences. This subsidy in relation to other imports has meant a subsidizing of the price of physical assets, and thus of the costs of using this factor, thereby encouraging a shift in the use ratio of capital and labour.

The other tax incentives devised to promote industrialization have also exerted a similar effect on the relative costs of productive services. The Law on the Promotion of New and Necessary Industries grants up to 100 per cent exemption from import duties on machinery and up to 40 per cent from income tax. Similarly, through manufacturing programmes, facilities are granted for importing raw materials and machinery. In addition, there are a number of fiscal mechanisms for permitting tax exemptions as a means of encouraging the formation of investment reserves, along with capital subsidies through the accelerated depreciation of company assets.

The financial instruments used to promote industrialization have also contributed to the same phenomenon. The policies of the Development Funds aimed at promoting industrial investment and production have been mainly based on providing incentives through the granting of credit at subsidized interest rates, thereby additionally contributing to a lowering of the cost of capital services in comparison with the cost of labour.

On the other hand, the effect of labour and income policies has been to increase the price of labour services due to social security payments, pay-roll taxes and the safeguarding by trade unions of high wages achieved through restrictive hiring practices.

[84] Ann Dryden Witte, "Employment in the manufacturing sector of developing economies: a study of Mexico, Peru and Venezuela", Ph. D. thesis, North Carolina State University, 1971, p. 74.

Effects on the capacity of the economy to generate productive jobs

The increase in industrial production, which during the last three decades has grown at an average annual rate of over 7 per cent, has contributed to an increase in employment, due more to the scale effect than to the substitution effect. At present, the industrial sector generates 33.7 per cent of the national income and provides 23.5 per cent of total employment. However, the capacity of Mexican industry to generate productive jobs per product unit has declined by more than 15 per cent over the last 25 years.

The lowering of the cost of capital services compared with that of labour has had a significant effect on the economy's capacity to absorb its available manpower productively.[85] Even where the possibilities of capital-labour substitution at the enterprise level are nil, the change in relative factor costs has weakened the job-generating capacity of the industrial sector: as industries employing more capital-intensive techniques are favoured the demand for capital increases and that for labour sinks.

Alterations in the structure of production in favour of sectors with a higher capital-to-labour ratio have meant a drop in added demand for labour per product unit, to the detriment of the employment-generating capacity of increases in the production of the sector. Industrialization incentives have had the collateral effect of favouring the use of non-labour-intensive technology, principally in those production stages or processes that permit more extensive substitution in the short term, with a more generalized effect in the long term, even in processes with more technological rigidity.

The import-substitution policy has caused a change in the production structure in favour of branches using more capital-intensive methods, so that industrial protectionism has discriminated against agriculture, which is the sector where production is most labour intensive;[86] in other words, fewer and fewer productive jobs have been created per unit of capital invested in the economy as a whole. Reports of the Secretariat of Industry and Commerce indicate that the average capital-to-labour ratio of the investments approved in 1973 in import-substitution industries amounted to 163,000 pesos, in marked contrast to the average capital density of 92,000 pesos in 1970 in the industries accounting for 70 per cent of total industrial exports (see table 11).

The reduction in the cost of capital services compared with that of labour has also had a substitution effect in encouraging an increase in the demand for capital and a consequent increase in the remuneration of this factor at the expense of workers' incomes. An increased demand for capital and reduced demand for labour has also resulted from expanded production in capital-intensive branches (along with discrimination against labour-intensive sectors), with a worsened functional distribution of income as a consequence. While the industrialization policies have made the use of capital cheaper, the return on capital has simultaneously increased, and the low capacity to generate employment has been an additional factor operating against income from labour.

---

[85] *Ibid.*, pp. 83-94.

[86] Production worth 1 million pesos requires 100 workers in agriculture, 55 in the food industry, 42 in the textile industry, 23 in the chemicals industry and 15 in the basic metals industry, according to a study by Sofía Méndez Villareal, "Technología y empleo", *Demografía y Economía*, vol. VIII, No. 1 (1974).

TABLE 11. CAPITAL DENSITY IN INDUSTRIES EXPORTING MORE THAN 4 PER CENT OF THE GROSS VALUE OF THEIR PRODUCTION

Branch	*Exports divided by gross value of production (percentage)*	*Contribution to industrial exports (percentage)*	*Gross fixed assets divided by number of workers (thousands of pesos)*
Manufacture of chemicals and chemical products	4	13.9	100
Basic metal industries	5	16.6	135
Manufacture of electrical and electronic machinery, apparatus, accessories and articles	6	9.2	33
Extraction and beneficiation of caol and graphite	9	0.1	55
Manufacture, assembly and repair of machinery and equipment, excluding electrical	10	6.5	52
Metal ore mining and operation of benefications plants	18	8.8	66
Manufacture of products of petroleum and coal	35	5.7	180
Extraction and beneficiation of other non-metallic minerals	60	9.1	105
Weighted average	8	79.2	92

Source: Figures based on the Ninth Industrial Census of 1971, *op. cit.*, and on the *Anuario del Comercio Exterior de 1970*, Directorate-General of Statistics of the Secretariat of Industry and Commerce.

This criticism of the industrialization policies does not mean that a labour-intensive technique would have been more profitable from the social standpoint. Capital-intensive techniques involve technological innovations which, although they may require less labour, may also save capital, thus leading to a lower social cost of production than a labour-intensive technique.[87] The choice of technology to be promoted must be based on a social evaluation in which the shadow prices of the factors of production are used.

Effects on technological selection, adaptation and innovation

Since Mexico has a mixed economy, the relative costs of the services of the factors of production that the market makes available to entrepreneurs are key elements in private decision making regarding the selection and adaptation of methods and techniques of production, transport and marketing of industrial products. While at certain stages in production there are technical rigidities, at others, such as transport, management and marketing, ample opportunities exist for capital-labour substitution.[88]

[87] John Sheahan, "Innovación y empleo", *Demografía y Economía* vol. V, No. 1 (1971).

[88] The aggregate production function of an enterprise may have a production elasticity as between capital and labour different from zero, although the production function of one or several of the phases of the process may show fixed coefficients; the price elasticity of demand derived from fixed capital assets differs from zero owing to the scale effect.

The type of technology employed by enterprises in the public sector is another decisive factor affecting industrial priorities. Major concessions have been made for imports of machinery and other equipment used in State enterprises in what is tantamount to a heavy subsidizing of the price of capital, and this has also affected decision making by public industrial enterprises. Some public enterprises enjoy even more advantageous import conditions than do private enterprises because of the budgetary compensation system under which the cost of import duties is defrayed or the special subsidies on these duties that public enterprises receive. In addition, their trade unions are often more powerful and see to it that wages and other benefits are kept significantly above the market average.

New techniques and methods of production, transport, management and marketing originate in the more developed countries, mainly the United States.[89] These technologies have been developed to save labour, which is the least plentiful resource in those countries, in marked contrast to the abundance of manpower in Mexico.

The principal vehicle for the transfer of new technology "packages" has been direct foreign investment. Although the technology involved in direct foreign investment is capital-intensive,[90] the industrialization policies, by failing to match the factor price to Mexico's relative resource endowment, have impeded an effective adaptation of the imported technology to make use of Mexico's manpower.[91]

By encouraging the use of capital-intensive methods, more advanced techniques have been introduced, which are usually the least labour-intensive, and the possibilities for technological adaptation have also been reduced. A particular capital-intensive technique may nevertheless involve lower social costs (in terms of shadow prices) than a labour-intensive technique; but there is a third possibility, more labour-intensive than the first and thus socially more advantageous, and it is precisely this type of adaptation that has not taken place.

The National Registry for the regulation of the transfer of technology, together with the National Council for Science and Technology, performs an important role in the new technological policy, particularly with regard to matching the transfer of technology to Mexico's resource endowment and improving Mexico's negotiating position in the acquisition of foreign technology through contracts and licences.

Industrial priorities and economic dependence

Import substitution has led to an increase in the profitability of production for the domestic market rather than for foreign trade, and in the protection extended to local production no account has been taken of whether the investors have been Mexicans or foreigners. Industrial protectionism has limited the opportunities of the transnational corporations for exporting to Mexico from abroad, but has offered very good opportunities for replacing exports through direct investment in Mexico, aimed at sales on a local market shielded from international competition and in some cases offering monopolistic returns.

---

[89] Of the patents filed in Mexico over the last 10 years, 90 per cent belong to foreign nationals.

[90] See Fernando Fajnzylver and T. Martínez Tarragó, *op cit.*

[91] Herman Von Bertrab, "La technología y la industrialización", *Revista de Comercio Exterior*, vol. XIX, No. 1 (January 1969).

Since the Second World War direct foreign investment in economic activities enjoying the highest levels of protection and geared to the domestic market has increased substantially. In 1940, only 7.1 per cent of direct foreign investment was channelled into industry. By 1950, this figure had risen to 26 per cent and by 1970 it was 74 per cent. On the other hand, investment in the primary sectors fell from 26 per cent in 1940 to 7.5 per cent in 1970.[92]

The transfer of technology that has accompanied foreign investment has been distinguished by a high capital-to-labour ratio, more than double the average for industry as a whole. Additionally, the commanding position of the transnational corporations has altered the structure of the market by contributing significantly to an increase in industrial concentration.[93]

The establishment of the National Commission on Foreign Investment and the enactment of the corresponding law have met the need to define economic policy with respect to foreign investment.

Geographical concentration of economic activity

The geographical distribution of economic, and particularly industrial, activity (see table 12) has been influenced by the general strategy of industrial development based on an import-substitution policy and reinforced by the concentration of power and the pressures exerted by regional political groups.

With the impetus given to industrialization through import substitution, the domestic consumer market took on greater importance, becoming a decisive factor in the location of industries. The expansion of industry was concentrated in the larger towns, where sizeable consumer markets already existed; and as a result industry was able to exploit the advantages and economies associated with urban areas. By stressing the production of consumer goods, the commercial policy added to the importance of the pre-existing large cities, which already offered extensive markets; in this way, these policies have consolidated the traditional urban structure.

Because of its anti-agricultural bias, excessive industrial protectionism led to increased migration from the countryside to the towns and exacerbated the problems of overurbanization.

Public investment in urban community services and improvement in communication and transport facilities in the large towns increased the attractiveness of the major cities as the location of industries and services. Investments by the State in infrastructure, together with most of the fiscal incentives provided, were designed to lower the costs of manufacturing in large urban centres. The availability of better urban services encouraged urban concentration, which in turn bred new social pressures and fresh demands for public services. Political and industrial groups in the cities pressed for greater infrastructure projects, thereby setting in motion a self-sustaining and cumulative mechanism that has brought the concentration of industry and population to alarming levels. Industrial concentration has advanced so far that the high economic and social costs of continued expansion of a few major centres have more than offset any advantages associated with urban concentration.

[92] See B. Sepúlveda and A. Chumacero, *La Inversión Extranjera en México* (Mexico City, Fondo de Cultura Económica, 1973).

[93] See F. Fajnzylver and T. Martínez Tarragó, *op. cit.*

TABLE 12. DEGREE OF GEOGRAPHICAL CONCENTRATION IN INDUSTRY

Area	Gross fixed assets (1970)	Gross fixed assets divided by: Number of establishments included in the census	Gross fixed assets divided by: Work force employed	Net capital divided by gross value added according to census	Total gross production/ employee
	(Thousands of pesos)				(Thousands of pesos)
Federal District	19 835 313	673	40.3	1.59	138
Jalisco	6 685 139	728	68.8	2.00	124
Mexico (state)	18 561 095	2 042	80.9	1.93	173
Nuevo León	13 130 837	2 902	104.4	2.13	191
Above four areas	58 212 384	1 114	61.6	1.80	152
Entire country	100 937 933	797	62.0	1.90	134

Source: Ninth Industrial Census of 1971.

Almost 80 per cent of the gross national product is produced in a few cities. Industry is concentrated in cities that had over 100,000 inhabitants in 1970. Within the Federal District and the State of Mexico, 46 per cent of all industrial workers are employed and 55 per cent of the value added by manufacturing industry is produced.[94]

Despite the high social costs of overurbanization, the concentration of business is continuing, and the reason is that the entrepreneurs do not directly pay the high costs that society must bear to provide transport facilities, an urban communications system, power, education and other services. In addition, the concentration of government agencies and financial institutions has helped to aggravate the problem of uneven regional development and the imbalance existing between industry and agriculture.

The industrial investment incentives provided by Mexican legislation have encouraged the concentration of people, services and industry.

The guidelines and priorities of industrial and commercial promotion policies have not taken into account the territorial factor. The effect of the Law on the Promotion of New and Necessary Industries and of the guarantee funds has been to encourage concentration: during the period 1940-1964, more than 70 per cent of tax exemptions and more than 60 per cent of loans were granted to industries located in the centre of the country. The concentration of higher education and of the public administration has also aggravated the problem.

To provide the initial impulse for industrial development in Mexico, unbalanced growth as unavoidable; but this imbalance has now reached such proportions that it is jeopardizing continued growth. The assignment of industrial priorities should enable a balance to be established between agriculture and manufacturing, and between the traditional growth centres and the new regions whose potential for development has thus far been neglected.

Economies of scale, excess capacity and vertical integration

Industrial plants producing import substitutes have been characterized by production scales that are not in keeping with the size of the Mexican market. The equipment and machinery, usually imported from the United States, have been designed for a market far larger than the Mexican and are often installed without the modifications necessary to adapt them to the country's relative factor endowment.[95]

The social costs of industrialization have risen because the inadequate scale of production has frequently required increased protection so as to make import substitution profitable, even where investment is being duplicated unnecessarily. Because of the indivisibilities of large-scale plants, in certain sectors only a few enterprises or only one have been able to operate profitably, leading to a situation that has favoured oligopolistic or monopolistic practices.

[94] Figure based on the Ninth Industrial Census of 1971 (Mexico City, Secretaria de Industria y Comercio, 1972).

[95] It should be noted, however, that in certain sectors where there is little technological rigidity, extensive experience in the use of imported machinery, mainly from the United States, has permitted the introduction of significant innovations in some enterprises; however, owing to insufficient competence, these innovations have not spread as quickly as would have been desirable.

To take advantage of the economies of scale that can be achieved with a larger market, import-substitution industries have been encouraged to export. But the protected industries have difficulty in competing internationally, and it is more difficult and costly for them to export.

The situation has improved in recent years owing to the rapid growth of the Mexican economy. The fertilizer industry, for example, has succeeded in operating with fairly large plants producing to world standards at lower than international costs, so that is has become internationally competitive. A similar development can be seen in the iron and steel industry.

For some industries the nominal protection rate is now higher than the implicit rate, an indication that there has been a rise in production efficiency and in domestic competition. Gerardo Bueno has compared nominal tariff protection, i.e., tariff schedule levels, and nominal implicit protection that relates internal to international prices.[96] He has found that in the primary sector (agriculture, forestry, fishing, mining and energy) tariff protection and implicit protection are equal. In the manufacturing sector, however, average nominal tariffs exceed implicit protection by a wide margin (33-35 per cent), though there are substantial variations from one group of industries to another. Nominal protection is higher than implicit protection for processed food, beverages and tobacco; building materials; intermediate products; and non-durable consumer goods. Differences are marked in the case of capital goods, where, although Mexican prices are lower than United States prices, the average tariff is 26 per cent.

As a result of industrial protectionism, many enterprises have been able to operate with excess capacity and still achieve a high rate of private profitability.[97]

The subsidy enjoyed by imports of machinery and equipment and the use of capital-intensive techniques have contributed to an excess of production capacity in certain industries and, as a consequence, to a low level of job creation per unit of capital invested. Excess capacity is not involuntary or the result of any irrational behaviour; it is the most satisfactory solution from the point of view of private profitability that enterprises have found in response to the input and factor costs they face.

The existence of excess industrial capacity and underemployment has led some Mexican economists to conclude, mistakenly, that fuller employment can be achieved in the long term simply by increasing the supply of money, through increased deficit spending and a more liberal credit policy. But underemployment is structural in nature and does not spring from insufficient effective demand. The increased use of industrial capacity and the creation of productive jobs require changes in the structure of the labour market and action to correct the distortions of the factors market.

Other considerations

It has been implicitly assumed up to now that the instruments used in setting industrial priorities are neutral, in the sense that they generate no additional distortions through the way they are applied. In practice, however, additional social costs are generated when these instruments are used inappropriately or inefficiently.

[96] Gerardo Bueno, "The structure of protection in Mexico", *op. cit.*, pp. 169-202.

[97] Paul Strassman, *Technological Change and Economic Development: The Manufacturing Experience of Mexico and Puerto Rico* (Ithaca, New York, Cornell University Press, 1968).

Industrial policy has been characterized by the use of instruments that can be applied discretionarily and on a case-by-case basis. Impersonal instruments that can be applied objectively are distrusted. The idea seems to exist that for an instrument to be effective it must be applied on the basis of personal assessments, a procedure that also strengthens the public sector's bargaining power vis-à-vis the private sector. This approach has resulted in an inefficient use of market mechanisms in regulating industry.

Where it is desired to increase production, machinery is used that affects various components of production costs without taking into account the inefficiencies it introduces by throwing the factors of production out of a socially optimal relationship. In selecting instruments, no analysis is made of their relative effectiveness for achieving different objectives; neither is there any analysis of the social benefits and costs of using alternative instruments. Instruments have not been ranked according to the additional social costs to which they can give rise and their suitability for correcting existing distortions.

Another shortcoming of industrial policy is that the instruments applied by different institutions are not co-ordinated. There has been a process of successive approximations and mutual adjustments that over the long term has produced good results, but at considerable cost.

During the period when the stabilizing development model prevailed, an effort was made to apply all the instruments available to reduce the cost of using capital services, the aim being to increase the rate of investment and employment. The idea still persists that any increase in the cost of capital will act as a brake on the creation of jobs a view that fails to take into account the possibilities of changes in production techniques.

Officials responsible for managing these instruments frequently complain that industrialists fail to avail themselves of tax incentives. The net worth of the incentive, after deducting the costs involved in complying with the conditions of eligibility for the incentive, is not considered. In addition, there is an excessive confidence that any stimulus to investment will work to increase the national income, whereas in reality the effect may be merely to transfer resources to more favoured sectors.

Sectoral priorities

One of the methods policy makers have used to guide the growth of the sector has been to establish sectoral priorities, that is, to identify and promote particular branches of industry in which production is regarded as crucial to the achievement of economic and social development goals. The principal instruments of promotion used to stimulate the development of these industrial branches have been complementary public investment, credit subsidies and tax exemptions.

The conflict between industrialization and agricultural development has been an ever-present factor in weighing the allocation of public funds. As one might suppose, industry has received the lion's share. However, the agricultural sector has not been as seriously neglected in Mexico as in other Latin American countries, and measures have recently been adopted to promote the primary sector through a variety of means, including a rechannelling of public funds, adjustments in guaranteed prices, more liberal agricultural credit, the duty-free import of farm machinery and a fertilizer subsidization policy. There is clear evidence of a move to correct the anti-agricultural bias, analysed earlier.

The setting of sectoral priorities for subsidizing industrial production is meaningful when the purpose is to redress an imbalance in the structure of production of the type caused by distortions in the goods and services market; however, when the factors market is also distorted, sectoral priorities become a subordinate criterion which, in certain cases, may further aggravate the existing imbalance. The continuation of the import-substitution policy has aggravated unemployment because the more general goal of correcting factor prices has been neglected.

The inefficient use of the work force has led to increasing social waste, with underemployment assuming major proportions. In the last few years the traditional criteria have been revised, and the generation of jobs and foreign exchange has come to be regarded as an important collateral objective of the new economic policy, whose purpose is to improve the distribution of income and reduce the country's economic dependence and external indebtedness.

A higher priority has been assigned to those sectors or branches of industry that generate employment and exports to a degree higher than the average for industry. Approached in this way, sectoral priorities coincide in aim with a more general policy designed to correct economic imbalances. The alternatives, however, are not perfect substitutes for one another. The real solution to the imbalances analysed earlier is to adopt a policy that directly corrects the distortions in the market in which they occur.

The promotion of labour-intensive industrial sectors and branches has caused a change in the structure of production involving the substitution of labour for capital at the aggregate level.[98] There continues to exist, however, a combination of factors that is optimal at the branch or enterprise level.[99]

Direct subsidizing of the use of manpower has the virtue that, over the long term, it gives rise to a substitution of labour for capital at the enterprise level, in addition to constituting, although to a lesser degree, an implicit subsidy for the production of the most labour-intensive branches; this leads to increased production in the short term,[100] which increases the demand for labour.

In promoting sectors that absorb the most labour, account should be taken not only of the creation of jobs directly in the sector promoted, but also the employment opportunities opened up by increased production throughout the chain of industries supplying that sector with inputs.

The employment multiplier is calculated by dividing the number of indirectly created jobs by the number directly created as the result of the production of a given value of output; and it is assumed that it is merely necessary to increase effective demand to bring about an increase in national employment, irrespective of whether the excess capacity of the underemployment is of the Keynesian type. If there is no open unemployment, the increase in production and employment generated by the branches promoted will be offset, in whole or in part, by a decline in the same parameters in other industries. But if the increase in industrial employment is drawn from the mass of underemployed workers, then resources have been transferred to more productive uses. However, an increase in monetary demand does not imply a reduction in underemployment, a phenomenon that depends on the structural factors discussed earlier.

---

[98] This has occurred despite the existence of fixed technical coefficients at the level of each enterprise or industrial branch.

[99] A subsidy to production is equivalent to a subsidy, in equal percentages, for the use of capital and labour.

[100] The final effect on production will depend on the price elasticity of final demand.

The promotion of industries considered to be strategically important is another way in which sectoral criteria have been applied. "Strategic" industries are taken to be those whose products are used as inputs in many other branches - for example, electric power and steel. Such a criterion could be justified if industries of this type produced some positive external effect not reflected in private profitability; there are no *a priori* reasons to believe this is true for all the protected industries.

Promotion of the "most dynamic industries" is another of the criteria used in establishing sectoral priorities; but unemployment has not been taken into account. Although the sectors or branches in which production has increased at a faster than average pace are also those that have recorded a high increase in the demand for capital and labour, they have contributed to an increase in the industrial sector's capital-to-labour ratio. The promotion of these industries is justified when their dynamism can be traced to the introduction of technological innovations that lower production costs or when the dissemination of such new technologies among other industries is encouraged.

Medium-scale and small-scale industries

Subsidized credit provided through FOGAIN and tax exemptions have been the principal incentives applied to promote small- and medium-scale industry. Although the subsidized credit and tax exemptions have meant an implicit subsidizing of production, they have also encouraged a greater density of capital.

The credit support extended to small-scale industry can be partially justified as a measure to compensate for the discrimination these industries encounter in the credit and capital market because the risk factor private banks assign to them is higher than the real social risk and because banks are basically concerned not with the social productivity of the investments, but with the assured recoverability of their loans.

Small establishments face lower labour costs than large industrial enterprises, partly because they are able to operate without strictly complying with minimum wage and labour welfare legislation; they are often family-run enterprises. Small-scale industry is an unprotected sector and its labour supply is more competitive than that of the larger establishments, but it has greater difficulties in obtaining financing. The combined effect is to push up the low cost of capital vis-à-vis labour, in comparison with the larger enterprises.

The lowering of the relative cost of capital services has worked to the advantage of the large capital-intensive industrial undertakings and has also encouraged mechanization in enterprises benefiting from the system of incentives to medium-scale and small-scale industry.[101]

Medium- and small-scale industry is less capital intensive than the large enterprises.[102] Some economists therefore conclude that a technological dualism exists and that small-scale industrialists are less efficient and achieve smaller returns on capital invested.[103] The process of modernization and competition in a mixed

[101] In sectors where large industrial establishments exist side by side with a great many medium-scale and small enterprises, this promotional mechanism reinforces the economic incentives to modernize the small enterprises. See Saúl Trejo Reyes, *op. cit.*

[102] On the basis of the Ninth Industrial Census of 1971, a capital-to-labour ratio of 42,000 pesos has been estimated for small enterprises with a capital of less than 1 million pesos, while for large enterprises the ratio is 86,000 pesos. The average for all industry is 62,000 pesos.

[103] Shifts in this proportion are mainly caused by the introduction of technological changes incorporated in human resources.

TABLE 13. STRUCTURE

(Thousands

	Gross fixed assets divided by							
	Gross fixed assets (1969-1970)[a]	*Number of industrial establishments*	*Number of industrial establishments*	*Work force employed*	*Number of workers*	*Interest on credits or loans*	*Machinery and equipment (1969-1970)*[a]	*Machinery and equipment Number of workers*
Medium-sized and small industrial enterprises	36 217 909.5	107 663	336 400	42 436	59 916	1 519 943	23 981 170.0	39 6[illegible]
Large industrial enterprises	59 434 232.0	12 300	4 832 051	86 101	112 455	2 288 000	46 344 503.5	76 335
TOTAL	95 652 141.5	119 963	797 347	61 961	84 424	3 807 944	64 325 673.5	56 [illegible]
Industrial enterprises producing capital goods	8 390 615.0	3 178	2 640 218	59 806	95 956	525 978	4 747 208.0	84 290
Percentage of total accounted for by medium-sized and small industrial enterprises	37.8	89.7	42.1	68.4	70.9	39.9	37.2	69.8
Percentage of total accounted for by large industrial enterprises	61.1	10.2	606.0	138.9	133.2	60.0	62.7	134.4
Percentage of total accounted for by industrial enterprises producing capital goods	8.7	2.6	331.1	112.6	113.6	13.8	7.3	95.6

Source: Ninth Industrial Census of 1971, *op. cit.*

[a] The figures for 1969 and 1970 have been arithmetically averaged.

economy involves the replacement of inefficient firms by others that are more viable, but there exists a socially optimal ratio of large to small enterprises. Criteria must therefore be introduced in the mechanisms for promoting medium-scale and small-scale industry that will ensure an allocation of incentives maintaining the relative advantages of this sector.

The capital goods industry

Before 1970, the capital goods industry was virtually non-existent, a fact that can be explained by the discrimination to which the protectionist system subjected this industry.

In 1970, only 8.7 per cent of investments in industrial fixed assets was directed to the production of capital goods. This industry provided employment for 7.7 per cent of the industrial work force and produced less than 10 per cent of the output of the entire industrial sector. The capital-to-labour ratio was very close to the average for industry, but significantly lower than in large-scale industry or in import-substitution industries (see tables 13 and 14).

In the early 1970s, production of capital goods grew at a rate of more than 10 per cent, and a high priority was assigned to the replacement of imports of these goods. At the beginning of 1975, "rule XIV", under which imports of industrial machinery and equipment had been subsidized, was repealed; and since the end of August 1975, subsidies have been granted for imports of machinery to be used in the production of exports of capital goods.[104] The financial support provided by the Fund for the Promotion of Manufactured Goods has increased threefold. At present, capital goods account for a quarter of manufactured exports.

These measures are correcting the bias in the treatment of different industries resulting from the protectionist policies and are contributing to a lowering of the subsidy for imports of capital goods so as to bring their price into a better relationship with the relative shortage of these goods. The capital goods sector employs more workers, per unit of invested capital, than do large-scale and

[104] Decision published in the *Diario Oficial* of 28 August 1975.

OF THE INDUSTRIAL SECTOR

of pesos)

Total gross production	*Spare parts consumed*	*Total remuneration to worke force employed*	*Gross fixed assets Total remuneration paid to work force employed*	*Average annual wage (1970 pesos)*	*Gross value added according to census*	*Gross value added according to census Gross production*	*Accounted for by maquila operations*	*Accounted for by maquila operations Total gross production*	*Interest on credits or loans Gross value added*	*Work force employed (1969/1970)[a]*
89 690 338	1 371 809	14 566 428	2 486	35 297	34 722 919	0 387	2 098 274	2 33	0 0437	853 455
122 713 607	2 509 617	18 426 368	3 225	40 105	47 659 722	0 338	2 797 438	2 27	0 0480	690 281
212 404 445	3 881 426	32 992 796	2 899	37 797	82 332 641	0 337	4 895 710	2 30	0 0462	1 543 736
21 056 529	176 970	298 057	28 151	41 676	511 240	0 024	137 220	0 55	1 0288	120 198
42 2	35 3	44 1	35 7	93 3	42 1	100 0	42 8	101 30	94 58	55 2
57 7	64 6	55 8	111 2	106 1	57 8	100 2	57 1	93 69	103 89	44 7
9 9	4 5	0 9	971 0	110 2	0 5	6 2	2 8	28 26	2 226 83	7 7

TABLE 14. CAPITAL GOODS INDUSTRIES

(Thousands of pesos)

Group	*Gross fixed assets*	*Gross fixed assets divided by*		
		Number of establishments	*Work force employed*	*Number of workers*
36[a]	1 975 891	49 873 050	571 063	822 382
37[b]	711 353	6 114 977	69 326	93 742
38[c]	5 703 371	311 173 840	1 038 318	861 502

Source: Figures based on the Ninth Industrial Census of 1971, *op. cit.*

[a] Includes subgroups 361, 362, 363 and 365, which cover: Manufacture and assembly of farm machinery and implements; Manufacture and assembly of woodworking and metalworking machinery; Manufacture and assembly of special industrial machinery and equipment; Manufacture, assembly and repair of other machinery and equipment.

[b] Includes subgroup 371, which covers: Manufacture of electrical industrial machinery, apparatus and accessories.

[c] Includes subgroups 381, 382 and 383, which cover: Construction, reconstruction and repair of vessels; Construction, reconstruction and repair of railway equipment; Manufacture and assembly of motor vehicles and manufacture of their parts.

import-substitution industries.[105] Thus an expansion in the production of capital goods and a reduction in the encouragement given to industries replacing imports of other types will lead to an increase in the demand for industrial workers.

Direct subsidies to promote production by the capital goods industry might correct the interindustrial imbalance, but the subsidy that the protectionist policy has given to capital, with the consequent distortions in the factors market, would persist. Paradoxically, Mexico would be better served by a tariff on capital goods import substitution than by a subsidy because of the existence of a double distortion—in the structure of industry and in the factors market.

[105] Capital per worker is 70,000 pesos in the capital goods industry, 80,000 pesos in large-scale industry (defined as having a capital of more than 1 million pesos) and 160,000 pesos in import-substitution industries. These figures are based on the Ninth Industrial Census of 1970, *op. cit.*, table 5.

The *maquila* industries

Maquila industries consist primarily of foreign firms operating on the basis of international subcontracting and engaged in assembly work at labour-intensive stages in the production process. The tax arrangements under which the *maquila* industries operate permit the temporary duty-free importation of all the machinery and materials used in the manufacture of products that are exported in their entirety. In addition, in accordance with United States customs regulations, Mexican *maquila* products imported into the United States are subject to duties only on that portion of their value that was added in Mexico, while the portion corresponding to the costs of the inputs and machinery imported from the United States is exempt.

In 1965, the Northern Border Industrialization Plan was drawn up for the principal purpose of establishing the *maquila* industry. By 1968, 40 enterprises had been established; by 1970, the figure had risen to 179; there were 495 in 1974 and 546 in May 1975. These firms have generated about 90,000 new jobs and an added value for Mexico of $187 million. The wages and salaries they paid amounted to 65 million pesos in 1971 and 182 million in 1974, and their share in the total value of Mexican exports rose from 2.7 per cent in 1970 to 7.1 per cent in 1974. The value added by *maquila* enterprises represents 28 per cent of total exports of manufactured products.

Capital investment in the *maquila* industry amounted to 796 million pesos in 1974, and employment was provided to 30,000 workers, that is, a capital-to-labour ratio of less than 10,000 pesos, far below the average for Mexican industry, which stood at 62,000 pesos in 1970[106] (see table 15).

Most of the workers in the *maquila* enterprises are young women between the ages of 16 and 24 who require a period of training of no more than one to three months. It has been found that for simple tasks Mexican women workers are more productive than their United States counterparts.

The success of the *maquila* industries illustrates the enormous comparative advantages Mexico can derive from an intensive use of its abundant work-force, which can be employed to good effect in certain activities or at certain stages of production (not necessarily for the entire production of a given product). In addition, this success reveals the social costs imposed by the anti-export bias of the protectionist policy, since to increase the export of manufactured goods it has been necessary to create an industrial sector wholly dedicated to export and hermetically isolated from domestic production when there is still idle capacity in the industries supplying the domestic market.

That the social price of foreign exchange is higher than the official price and the social price of labour less than the market price increases the social profitability of the *maquila* industries, whose principal impact has been the generation of jobs and foreign exchange. Nevertheless, when considering social profitability one must bear in mind that employment and production in the *maquila* industry are totally dependent on cyclic fluctuations in the United States market. A recession in the United States has a significant impact on this industry. In 1974/75 for example, as a result of a recession in the United States 35,000 workers lost their jobs and numerous firms had to close. The competition of other countries offering equal or better incentives to attract subcontracting industries of the *maquila* type is another factor adding to the vulnerability of these industries.

[106] Figures based on information from the Secretariat of Industry and Commerce and the Banco de México, SA.

TABLE 15. *MAQUILA* INDUSTRIES

	July 1971	*August 1972*	*June 1973*	*October 1974*	*Percentage increase*		
					1972/71	*1973/72*	*1974/73*
Number of *maquila* enterprises	251	339	370	495	35.0	9.1	33.7
Fixed assets per worker (thousands of pesos)	–	5.2	14.7	9.3	–	182.6	– 36.7
Value added (thousands of pesos)	–	750 428	1 084 413	1 646 376	–	44.5	51.8
Number of workers	29 214	48 060	51 184	86 688	64.5	– 0.12	69.3
Monthly pay-roll (thousands of pesos)	65 198	68 885	76 384	182 508	–	–	–
Wages per worker (thousands of pesos)	2 231	1 433	–	–	–	–	–
Value added per worker (thousands of pesos)	–	16	21	74	–	31.2	252.3

Source: Secretariat of Finance and Public Credit and the Banco de México, SA.

The risks and uncertainties inherent in *maquila* industry operations must be reflected in calculations of their social profitability so as to permit the determination of the priority that should be assigned to these industries.

Othe. industries

A high priority has been assigned in recent years to the stimulation of agroindustrial production because of the major impact it will have on the utilization of a number of natural resources and the country's abundant underemployed rural manpower. In addition, the agroindustries advance agrarian reform and represent an important contribution to the earning capacity of the rural population, thus helping to curb the increasing migration from the countryside to the towns.

Major growth has been recorded in the iron and steel industry as a result of heavy public investment. In 1970, production of iron and steel products stood at 2.5 million tons; by 1975 this figure had risen to 5 million tons; and it is calculated that by 1980 the installed capacity will reach 9 million tons. At present, the country has achieved self-sufficiency in this sector.

Because they are considered key industries in the drive for economic development, high priority has been assigned to the chemical and petrochemical industries, sectors that together accounted for more than 7 per cent of GDP from 1970 to 1973. Although there is now very little State participation in secondary petrochemistry, this participation will increase in the years immediately ahead as a natural consequence of the priority assigned by the State to these activities.

Considerable attention has been directed in recent years to the food industry because of its importance for the masses of the population and of its effects on income distribution. The food industry is the largest generator of employment in manufacturing industry, accounting for 22 per cent of manufacturing jobs in 1970. It is the industrial branch with the highest rate of employment per unit of capital. The price of the shopping-basket of goods it produces has a powerful impact on the real wages of the workers. It has expanded rapidly in recent years, but has not progressed much technologically, a factor that has been reflected in the poor quality of its products and its difficulties in exporting.

The increasing involvement of transnational companies in this industry[107] has been a subject of concern to the Mexican authorities, in view of the government objective of ensuring economic development free of foreign dependence.

As far as the textile industry is concerned, 10 per cent of all workers employed in manufacturing enterprises worked in this branch in 1970. Its expansion has also been rapid, but with only slight improvements in productivity and a high degree of geographical concentration. Promoting this sector is considered a means of providing more productive jobs for the underemployed and lowering the cost-of-living indices based on the basket of goods for mass consumption.

In third place, following foods and textiles, in terms of industrial employment are the clothing and footwear industries, which in 1970 accounted for 8 per cent of the total manufacturing work force. Capital density in these industries is low—40,000 pesos per employee in 1970—and their pay-rolls account for a major portion of the value added. They show a high degree of geographical concentration and operate with idle production capacities, of about 25 per cent, a problem that demands corrective action.

[107] Twenty-five per cent of the value added in this sector is produced by transnational enterprises.

As can be seen, a more detailed sector-by-sector analysis of industry is needed as a means of improving the process by which priorities are established. Of necessity, this process must take into account the desirable characteristics of growth in each sector, and the promotional and regulatory instruments that will be most effective in each case.

Conclusions

The setting of industrial priorities has been the simultaneous function of several official agencies. To this end, direct and indirect instruments for regulating industry have been used, the most noteworthy of which are tariff protection, tax incentives and financial support, price-fixing for goods and services supplied by the public sector and investment by the State. There has been no explicit industrial programming, nor have common rules governed the application of the various mechanisms, the prevailing approach consisting rather in the use of certain *ad hoc* criteria and the exercise of broad discretionary powers by the responsible authorities.

Priorities have been established at the industrial branch level, with little attention given to the resulting overall production structure. The industries that have been selected for special promotion have been those regarded as strategic for economic development because of the importance of their linkages with other activities.

During the period of what was known as "stabilizing development", an industrialization policy based on an import-substitution strategy was initiated, resulting in a strengthening of the protectionist system and the creation of a whole series of incentives aimed at lowering the cost of capital services and encouraging savings. These measures were accompanied by a policy of price stability and rigid exchange rates. The belief was that industrial growth would generate sufficient employment to absorb the increasing supply of labour and that its benefits would reach all strata of the population.

The industrialization policies of the last three decades have led to imbalances in the allocation of resources among different branches of industry and to distortions in the factors market that have favoured the use of capital-intensive methods at the enterprise and industry level. To this must be added the social costs and inefficiencies engendered by the geographical concentration of industry, monopolistic power, absence of technological innovation and adaptation, excess capacity and other shortcomings attributable to the industrialization strategy itself and to the inefficient use of industrial policy instruments.

All these static and dynamic inefficiencies are reflected in the industrial system's incapacity to put to productive use the expanding supply of labour and to free the Mexican economy from foreign technological and financial dependence, as well as in the non-competitiveness of Mexican industry on international markets.

In the last few years a change in the development strategy has become evident, and, in addition to growth, equitable income distribution and economic independence have been adopted as central objectives. The achievement of these goals will require a focusing of efforts in the industrial sector on the creation of greater employment, the generation of foreign exchange, the decentralization of industry, technological adaptation and the basic consumption requirements of the population.

Nevertheless, owing to the persistence of many of the traditional criteria and procedures in the application of industrial policy instruments, the transition to a new stage in the sector's development has not been easy. For more than three decades, the industrialization policy itself has generated powerful economic interests, which, through pressure groups, are endeavouring to maintain the excessive protection from which they have benefited, at the cost of an increasing imbalance in the economy.

The transition is also impeded by inadequate co-ordination of the instruments under the control of various public agencies, and by the sheer momentum of the previous policy, evidence of which can be seen in the failure of certain officials with responsibility for decisions in this field to break with the traditional patterns.

Several concrete measures have recently been taken to achieve a more effective use of the country's abundant natural resources and manpower and to correct the imbalances existing between the primary and industrial sectors. Incentives have been devised for promoting exports, and special agencies have been established to regulate the transfer and adaptation of technology and direct foreign investment.

In the selection of industrial activities classified as having a priority, no consideration is given to the shadow prices of the factors of production, nor to the resulting sectoral structure. Benefit-cost analysis is sparsely applied, and there is not yet a common discount rate or common shadow prices for labour and foreign exchange in project evaluation. Industrial activities are selected on an *ad hoc* basis and in relation to their relative contribution to the objectives of increased employment and the generation or saving of foreign exchange, for example, on the assumption of their compatibility at the global level. In selecting the instruments to be used in the promotion effort, no consideration is given to their potential impact on the specific distortions it is hoped to counter. The problems raised by the use of multiple investment-promotion instruments still remain to be solved.

If the new development model is to be brought into conformity with the guidelines established for industry, an industrial programming system should be initiated, setting forth in clear terms the desirable contribution of each branch of industry to overall industrial objectives. The use of direct and indirect industrial policy instruments must likewise be programmed to influence decision making regarding private investment so that this investment will be efficient; establish sectoral priorities consistent with industrialization objectives; and define precisely the role of State industry within the framework of the new industrial policy.

Bibliography

Bravo Aguilera, L. Las nuevas tarifas de los impuestos generales de importación y exportación de México. *Revista de comercio exterior*. March 1975.

Krueger, Anne O. The political economy of the rent-seeking society. *American economic review* (Nashville) 64:3, June 1974.

Vernon, Raymond. The dilemma of Mexico's development. The roles of public and private sectors. Cambridge, Mass., Harvard University Press, 1965.

09166

V. Industrial priorities in the Republic of Korea*

Background

The "optimal" planning process changes depending upon the issues to which the plan is addressed and the circumstances in which it is formulated. This statement appears to be "trite but true" until it is recognized that many economists advocate that the orthodox planning methodology be applied in all cases.

The history of investment planning in the Republic of Korea illustrates extremely well the interdependence of techniques of planning with the problems addressed. The techniques used in the second and third five-year plans differed substantially, and the difference was not an accident. Rather it showed that techniques of planning had been adapted to objectives and to circumstances existing when the plans were drawn up.

Planning methodologies can be contrasted in many ways. Perhaps the most familiar point of departure is to determine how specific the plan is with respect to investment projects. At one extreme, only sectoral investment information relating to public investment programmes is specified. At the other, all investment, including that undertaken by private entrepreneurs, is detailed in project form. Another point to determine is how the plan formulation is organized–centralized *versus* decentralized–and what is the nature of the information flows and networks by which information is transmitted among units participating in planning. A third point to determine is the predominant method of implementation: central resource allocations and performance targets (command systems), on the one hand, or incentive systems, on the other. Command economies rely primarily on output targets coupled with resource allocations to achieve them. Mixed economies rely on a combination of central resource allocations and price and non-price incentives.

Orthodox comprehensive planning methodologies are well suited to plans that rely on resource allocation (including sectoral output targets) for their implementation. These techniques, which shall be called "resource planning" methods, are designed to determine a set of consistent or optimal resource allocations that achieve plan objectives given assumptions about technology and relative price movements. They are not well adapted to devising the sets of incentives necessary to achieve the plan goals. On the other hand, current methodologies appropriate for planning incentive systems are typically partial-equilibrium analyses of various instruments of economic policy: tax incentives, trade incentives, monetary policy incentives. They are not integrated with each other and do not pay explicit attention to the need for a balance between the supply and use of resources and products. The strengths of these techniques, which will be called "incentive system

*Irma Adelman, University of Maryland, and Larry E. Westphal, a staff member of the World Bank.

planning" methodologies, are thus the weaknesses of resource planning techniques and vice versa.[108]

Each of the aspects discussed above can be found in all plans, though the emphasis may differ. The most interesting aspect of planning of investment in the Republic of Korea is that the predominant approach to planning embodied in the second five-year plan differed in all respects discussed above with that of the third five-year plan. While the second five-year plan specified the investment programme in each sector project by project, the third five-year plan specified only a few major investment projects. The second five-year plan was formulated in the central planning bureau; the third five-year plan was formulated in a decentralized manner in several ministries. Finally, the second five-year plan relied primarily on resource planning techniques, though the formal plan formulation was preceded by two important price incentive studies. By contrast, the third five-year plan employed mostly incentive planning approaches, though it was supplemented by a macroeconometric study of the interrelationships among the rate of growth, domestic and foreign savings and foreign-exchange needs. Since neither the planning personnel nor the political power structure had changed during the periods of the two plans, the Republic of Korea offers an interesting case study of the interaction among methodologies, issues and environment of planning.

What changed between the two plan formulation periods were the primary issues confronted by the planners. The second five-year plan (1967-1971) was concerned with allocating major amounts of public investment and selecting an appropriate economic growth rate. These problems were analysed simultaneously, together with the selection of foreign trade and domestic production patterns. The private investment needed to fulfil the plan was calculated, and the incentives necessary to induce it were estimated at the same time. Thus the selection of industrial priorities in the second five-year plan proceeded in an integrated manner and placed major emphasis on the internal consistency of sectoral activities, macroeconomic objectives and resources, and on the rationalization of economic incentives.

The third five-year plan, starting in 1972, by contrast envisaged only a small role for public investment. The primary goal of planning of industrial priorities thus was to provide suitable incentives to the private sector, compatible with resource needs and availabilities. The dynamism of the private sector had been established. No one doubted that, given the right incentives, private entrepreneurs would be able to respond appropriately. Thus the primary planning problem was to select the appropriate incentives and to establish the macroeconomic limits to growth. Planning for consistency was not felt to be necessary. The role of the public sector was to set incentives and respond, where desirable, to private requests for credit, subsidies, and foreign-exchange allocation. Hence, an important task of planning at this point was to develop project-evaluation capacity and decision-making capacity at the ministerial level.

At first blush, the sequence of approaches to planning adopted in the Republic of Korea is the reverse of the textbook sequence. The Republic of Korea went from an integrated planning system, with well-articulated interaction among sectoral,

[108] The formal dichotomy between resource planning and policy planning is more apparent than real. In the technical jargon of programming, one is simply the dual of the other. But in the world of applied planning, resource planning techniques are vastly better developed and more widely known than are policy planning techniques. Moreover, in practice, programming models tend to yield either good shadow prices or good resource allocations, but not both.

macro, and project planning, to a less integrated system of special studies and project planning mostly at the ministerial level, constrained, for consistency, only by a macro plan and by a centrally monitored resources budget. Sectoral planning within the input-output framework was downgraded; policy studies of incentive structures were upgraded.

The setting in which both plans were formulated was essentially the same, namely, a setting characterized by strong central guidance to an economy in which private capitalism flourished. What differed was the nature of the economic problems, possibilities for solving them and the instruments of intervention, and it is the change in these that led to changes in decision making.

Institutions for planning and instruments for implementation

The "central planners" in the Republic of Korea are found in the Economic Planning Bureau (EPB) of the Economic Planning Board, at least three steps away from the seat of ultimate decision-making authority. The deputy prime minister, head of the Planning Board, is responsible for co-ordinating economic policies. In his role as co-ordinator, the deputy prime minister is constrained by the heads of the ministries dealing with economic issues. At the apex is the president, who is constrained, as are all policy makers, by political realities. Thus, EPB can by no means assume that its plans will be automatically implemented. To a large degree, the power of the planners depends upon co-operation with the Budget Bureau (also represented on the Planning Board), for the budgeters control the allocation of funds to ministries and projects. This budgetary control is subject to the same chain of command as are the actions of EPB, and co-operation (infrequently achieved) has been realized in the past only through the deputy prime minister's directives.

The central planners have two co-ordinating roles vis-à-vis the ministries, special offices, development banks, and autonomous government corporations whose activities they endeavour to co-ordinate. The first is co-ordinating the allocation of resources to ministries that act as producers of public goods and services (education, public health, rural electrification and so on) and thus to competing social programmes. The second is co-ordinating the various agencies' policies towards the private sector. It is this latter type of co-ordination with which central planning in the Republic of Korea has been almost exclusively concerned. Interestingly, central planning has tended to be more of a politically sensitive issue when applied to inter-ministerial resource allocation than when applied to the private sector.

Government measures that affect private decisions are *(a)* price setting for certain key resources and goods, such as foreign exchange, investment funds, transport and rice; *(b)* subsidies given through tax exemptions, differential pricing or directly beneficial expenditure; *(c)* quantitative restrictions on imports of goods and capital, on the allocation of investment funds through the banking system, on the use of transport facilities; and *(d)* quantitative targets for exports and overhead investment. Subsidies, quantitative restrictions and quantitative targets are administered within centrally imposed constraints by several ministries, notably Agriculture, Commerce and Industry, and Finance and by special offices, such as the Office of National Tax Administration. The setting of key prices is more highly centralized at the ministerial and presidential levels. In addition, during the first two

years of the second five-year plan, EPB vigorously exercised its mandate to review prospective investment projects financed by foreign capital to establish that they would contribute to the goals of national policy.

The second five-year plan

The central issues

The question when the second five-year plan was being formulated was: "How fast can the country grow?" From the early 1950s to the early 1960s, *per capita* GNP had grown at the unacceptably modest rate of less than 2 per cent per annum in real terms. In 1963, growth performance picked up, making hopes for more rapid growth appear realistic. The plan, formulated in late 1965 and early 1966, concentrated on establishing a consistent investment programme that would just match the economy's savings and export potential. This concentration reflected the major growth constraints foreseen at this time: a paucity of viable proposals for industrial projects, a scarcity of domestic investment funds and a need for foreign exchange to finance imports of raw materials and capital goods.

Organization of planning

The second five-year plan was formulated in the Planning Board. EPB co-ordinated both the technical work on plan formulation and the work of the joint interagency and private industry committees, which provided essential information. It played an important role in implementing the plan, especially during its first two years, before divergences between plan projections and plan realization became serious.

Methodology of planning

The tradition of orthodox, comprehensive resource planning was adopted in formulating the second five-year plan. The analytical framework for the plan had three principal elements: an aggregate macroeconomic model; a 49-sector dynamic input-output projection model; and, as a supplement to the latter, a 280 input-output table used for project evaluation. Deficient data precluded the construction of a complete aggregate model in time for the plan's publication. The sectoral model, therefore, became the key analytical element for outlining alternative feasible growth paths. It also provided a consistent framework for piecing together an efficient set of investment projects.

The sectoral model, a fairly traditional dynamic input-output model, was an open model in that, except for investment and imports, the elements of final demand were projected exogenously. Imports were projected with the aid of an input-output matrix. Investment was estimated by an iterative process of backwards solution reminiscent of dynamic programming procedures: assuming exogenously projected growth rates for the non-investment components of final demand and (initially) setting investment to zero, required gross production in each period of the plan was calculated sector by sector; the required sectoral capacities were then compared with existing capacities adjusted for depreciation; the comparisons yielded a first guess at

required plan investment. The required investment was then allocated period by period, using information on gestation lags, and the model solved once more for sectoral productions, with the final demand vectors now including required investment. The capital stock comparisons were then repeated, yielding second approximations to required investment and the model resolved until in each period required investment by sector and "actual" investment matched, and sectoral production and sectoral capacities were internally consistent. Usually two iterations sufficed for convergence.

The input-output matrix used in the calculations contained 43 sectors; however, for greater consistency, capacity requirements were also examined at the 280-sector level (see below). In turn, the primary technical innovation in the structure of the sectoral model was the attempt to project the coefficients of the input-output matrix dynamically. Ten industry committees, composed of engineers, business experts, economists, ministry officials and technical experts, were set up to estimate likely changes in the production technology and output mix of their sectors. The work of these committees was carried out at the 280-sector level and reaggregated to the 43-sector level. The dynamic projection of the input-output matrix consumed a great deal of resources approximately five man-years. A post-mortem on the forecasting performance of the corrected and uncorrected matrices indicated, however, that the forecasts with the unadjusted matrix came closer than those with the adjusted matrix. Apparently the committees overestimated the impact of change upon the structure of production, in part because they misjudged the actual timing and sequence of several major projects.

Though resource planning took up the lion's share of the effort devoted to the formulation of the second five-year plan, it was preceded by a significant input of incentive planning. This earlier round of incentive planning had led to the exchange-rate reform of 1964 and interest-rate reform of 1965.

The exchange-rate reform of May 1964 devalued the won from 130 to 255 to the dollar and substantially liberalized exchange controls. The devaluation was based on a study comparing world and domestic prices for about 300 specified commodities; the study indicated that the median purchasing power parity ratio at the end of 1963 placed the appropriate exchange rate somewhat below 255 won per dollar. The devaluation, moreover, was only one of a series of policy changes gradually leading to the adoption of a comprehensive export promotion programme consisting of price incentives (indirect tax and tariff rebates, interest-rate subsidies and reduced direct taxes, and several other minor subsidies) and to the establishment of such agencies as the Korean Trade Association to provide technical assistance and assistance in marketing promotion.

Real export incentives were maintained relatively constant after 1964, while sporadic efforts were made to reduce import restrictions. Quantitative import restrictions were substantially liberalized in 1965. A study of the tariff structure was also undertaken;[109] it demonstrated that, even though by international standards the average tariff rates were quite low (averaging about 9 per cent in 1965), they introduced distortions, according high effective protection to some industries while providing disincentives to backward integration in others. Political pressures for continuation of the existing tariff structure were sufficiently potent, however, so that efforts to move to uniform rates of protection were abandoned.

[109] R. I. McKinnon, "Tariff and commodity tax reform in Korea: some specific suggestions" (Washington, United States Agency for International Development, 1967).

The interest-rate reform of September 1965 doubled the six-month deposit rate to 24 per cent per annum (a real interest rate of around 11 per cent). Borrowing rates, except for special purposes, were comparably raised.[110] The reform was meant to set a real rate of interest more in line with the prevailing real rate of return on capital, to enable a shift from quantitative credit rationing towards "market" allocation and to encourage domestic savings. It was also hoped that higher interest rates would reduce inflation. The move was undertaken after a study had estimated the real gross rate of return on capital in manufacturing at about 15 per cent.[111] Given an *ex ante* inflation rate of 10 per cent, a nominal rate of 25 per cent – approximately the rate chosen – was the implied appropriate rate.

The trade reform was the key measure in shifting the economy from a strategy of import substitution towards one of export promotion. The financial reform became the classic example of a successful policy of mobilizing resources, stabilizing prices and promoting investment. Real domestic savings doubled in 1965 and again doubled by 1967; the velocity of money was reduced, halving the rate of inflation over what it would have been without the cut in velocity induced by the change in the interest rate; the incremental capital-output ratio declined by 30 per cent; and the investment rate rose as fast as the increase in savings permitted.

Both reforms reduced government interference in the economy[112] and brought key resource prices into line with relative resource scarcities. Since prices must be used to measure the value of resources in uses alternative to those being investigated, adequate resource planning is a vertual impossibility when prices are severely distorted. In this sense, the reforms of 1964 and 1965 were a precondition for meaningful resource planning. But their significance was far greater. For much of planning's positive impact on economic performance came from these reforms. The basic driving force for development in the Republic of Korea is the private-sector response to price and non-price incentives. Sustained development in a predominantly private economy is therefore impossible without prices (as affected by subsidies, taxes and quantitative controls) that reflect relative resource scarcities in the pursuit of development objectives.

In formulating the plan, the planners attempted to integrate project appraisal with the sectoral model. Planning was both "top-down" and "bottom-up". The sectoral model was used to obtain aggregate magnitudes and to identify likely areas for investment by estimating demand. On the other hand, the set of feasible growth paths was seen to be constrained by the number and types of efficient projects that could be designed and implemented during the period of the plan.

The 10 industry committees referred to earlier were created to make project appraisal consistent with the sectoral model. The committees were established early in the plan's formulation and were its most innovative aspect. Their first task was to prepare industry profiles, which were process analyses of major production activities in several industries. The profiles were most extensive where significant changes in technology were anticipated.

---

[110] For a discussion of the effects of the interest-rate reform, see G. Brown, *Korean Pricing Policies and Economic Development in the 1960s* (Baltimore, Johns Hopkins, 1973).

[111] Other studies put the gross rate at 20 per cent or more, G. Brown, *op. cit.*, p. 200, and the net rate at 8 per cent, Bank of Korea, *Monthly Statistical Review*, various issues.

[112] The interest-rate reform led to less need for capital rationing, though credit rationing continued along with preferential interest rates for some classes of borrowers.

The preparation of the industry profiles turned out to serve two functions: parameter estimation (capital-output coefficients and marginal input-output coefficients) and the establishment of initial conditions in the sectoral model. The latter was, in retrospect, by far the most useful result The original data base for estimating input-output coefficients in the sectoral model consisted simply of the 1963 input-output table. The planners expected that the selective use of the input-output coefficients derived from the industry profiles, in place of the 1963 coefficients, would substantially improve the model's forecasting ability. As indicated above, that turned out not to be the case; the sectoral model's forecasts would almost always have been closer had the 1963 coefficients been used without modification. But the preparation of the profiles gave industry specialists a needed opportunity to review investment prospects for various industries; and it did so in a way that highlighted the need for consistency.

Upon completing the profiles, the committees were to have analysed supply-and-demand forecasts obtained from the sectoral model as an input into revised input-output projections and into project appraisal. In so doing, the committees were to disaggregate the sector-by-sector forecasts to examine commodity supply and demand. There seems to be a consensus among participants that the committees failed to obtain sufficiently disaggregated forecasts and were largely unable to use the model's results in project appraisal, partly because the profiles consumed almost all of the committees' budgeted effort. But, in addition, most committee members were conceptually unable to translate the sectoral model's aggregate projections into the more detailed production, trade and demand projections required for project appraisal. Fortunately for the development of an investment programme, the profiles provided a set of viable projects, albeit one of limited scope. However, the profiles, having been prepared before the sectoral model's solution, were the result of only half an iteration, as they were not revised on the basis of the forecasts of the sectoral model subsequently.

Economic results

The plan, and the associated changes in policies, had a strong impact on the economy. The emphasis on foreign trade was shifted from import substitution to export expansion, with a concentration on labour-intensive industries. The real rate of growth of GNP rose from less than 2 per cent in the years preceding to better than 10 per cent during the plan period. *Per capita* income was doubled in less than eight years; exports rose annually by 30 per cent; the rate of inflation was reduced from over 10 per cent to less than 6 per cent. The real income of the poorest rose at the same rate as GNP, and measured unemployment was reduced from about 8 per cent to about 4 per cent.

Critique of methodology of planning

Despite the spectacular economic results achieved, uneasiness over the planning methodology arose after the first two to three years, uneasiness occasioned in part by

the very success of the plan. The higher rate of growth[113] that materialized made the investment project information contained in the plan obsolete within two to three years. At this point a set of revised investment projects should have been prepared, repeating the methodology devised earlier. The planners were, however, reluctant to undertake so large an effort, even though the initial plan set forth a mechanism and procedures for annual plan revisions phased into the budget cycle. They instead remained bound to the original plan. After a while, the plan appeared not to yield useful information and to lead to undue rigidity in decision making.

While the consistency framework used in preparing the second five-year plan highlights interdependencies among sectoral aggregates, it appears not to yield information that can be applied directly in many cases. If the question is whether to build the country's first cement plant (refinery, steel mill, petrochemical complex etc.), then a sectoral model having a separate cement sector (petroleum, steel etc.) yields directly applicable information in the form of a forecast of demand. In view of the structural changes that accompany development, the model's demand forecasts in those cases are likely to be superior to those obtained from more partial methods. The relevance of demand forecasts for project appraisal in diversified sectors is, however, another matter. Contained within such sectors are a wide variety of products, each used for several purposes. Disaggregation of these sectors is inherently arbitrary, particularly in sectors in which the primary focus is on import and export decisions. Furthermore, the aggregate consistency framework provided by the sectoral model is not sufficient to ensure consistency at the more disaggregated level of individual projects and commodity balances. These considerations argue that the utility of the sectoral model in formulating a consistent set of investment projects is of necessity quite limited. Of course, given sufficient manpower and computing facilities, it may be possible to approach consistency at any level of aggregation. But a crucial question is just where to allocate the limited planning resources of a less developed economy.

Preparation for the second five-year plan did uncover a set of viable investment projects (from the industry profiles), which was its principal function. The resulting list of "approved" investment projects was, naturally, by no means exhaustive. When, during the plan's implementation, an entrepreneur presented an investment proposal for the planners' approval (needed to import capital equipment and secure access to foreign finance), the proposal was first checked against the list of approved projects. If found there, it was accepted. If not found, the planners were uncertain whether to approve or reject the project.

For some reason the planners were reluctant to evaluate a project outside the plan, even though a benefit-cost appraisal formula had been selected during the plan's formulation that could have been applied in such cases. The formula was based on present values and actual interest, exchange and wage rates (which, it was felt, were close to their shadow rates after the reforms). Smooth interpolation formulae for depreciating plant and equipment with different lifetimes were developed, and the whole process was computerized to permit sensitivity analysis. But the planners felt

[113] This higher rate was not unanticipated, even in 1965. However, the deputy prime minister constrained the planners for political reasons to base their projections on an anticipated growth rate two percentage points lower than they thought achievable. The actual rate was three percentage points higher than the one used in the plan. The authors compared actual performance with the sector model runs for the higher growth rate and found highly significant the degree to which the model would have correctly predicted actual performance had a more realistic rate of growth been used.

that the use of the sectoral model was necessary to achieve an efficient and consistent set of projects, and they thus hesitated to use project appraisal alone. Adding to the difficulties was the fact that, in some sectors, the aggregate of projects approved within 18 months of the plan's start represented a volume of capacity that met or exceeded the plan's target. The planners did not know whether to place a freeze on additional projects in these sectors or whether to assume that "excessive" applications indicated a larger number of profitable investment opportunities than had been originally foreseen.

The solution to the problem was obvious: the plan needed a thorough revision; but a repetition of the original planning procedure (even at a reduced scale) was impractical because of the limited planning talent available, particularly after foreign aid missions were no longer able to provide staff for a major planning effort. Moreover, basic data needed to revise the plan were not available. The Government had (purposely) failed to monitor the plan's implementation using an input-output type of data system that could easily be compared with the plan's projections.

The plan was revised, but only in aggregate terms. No attempt was made to revise the list of investment projects to be undertaken or to re-establish investment targets by sector. At this point the planners believed that comprehensive planning had failed them, since it no longer provided information useful for policy purposes. The plan was put on the proverbial shelf to be brought down only infrequently to point proudly at the fantastic overachievement of most targets.

The third five-year plan

By 1969, the year work began on formulating the third five-year plan, the issues of planning and the planning environment had changed drastically. The planners responded by shifting to a crude form of incentive planning and by turning to a decentralized procedure for formulating the new plan.

The central issues

By 1969, the Republic of Korea's potential for extremely rapid growth had become an undisputed fact. The issue, therefore, no longer was how fast a rate of growth could be achieved. However, the very rapidity of the growth had led to numerous imbalances, bottle-necks, inefficiencies, and stresses and strains. Some of these strains were highlighted in the summer of 1969 by defaults on foreign loans by several firms that had either been established or had expanded during the period of the second five-year plan. The high rate of growth had resulted in a dangerously rapid buildup of foreign debt and had stimulated inflation. The disparity between rural and urban incomes had increased and inflation threatened to accelerate. The major policy issue, therefore, shifted to: how can growth be made more harmonious, less wasteful, and more securely based? A subsidiary question was: should the growth rate be reduced? But in this instance the growth issue was important only to the extent that growth, efficiency and distribution were interrelated. Since the major sources of the bottle-necks and strains were the unco-ordinated, buoyant activities of the private sector, planners were led to focus on how to get the private sector to rationalize and co-ordinate its activities to achieve harmonious growth.

Organization and planning

Along with the change in the key policy issues came fundamental changes in the process of planning. Whereas the formulation of the second five-year plan had been centralized in the Economic Planning Board to the exclusion of formal planning elsewhere, the formulation of the third five-year plan involved almost all the ministries in some manner. Several ministries, notably the Ministry of Education and the Ministry of National Construction, were independently preparing comprehensive plans within their own areas of responsibility.

The extreme divergence between reality and plan in the later years of the second five-year plan left the planners unsure of what to do and therefore unable to contribute to implementation. Correspondingly, the power of EPB gradually diminished, even though things were turning out better rather than worse than planned. At the same time, the various ministries began to assert themselves in the planning field. Thanks to the apparent success of planning as reflected in the economy's performance and in the power that planning had conferred upon EPB, planning became a highly prestigious activity that captured headlines and, more important, earned the president's attention and blessing. The result was keen competition among ministries to produce plans. EPB could no longer claim influence simply on the basis of having a consistent programme for the future. Therefore, ironically, while planning was being "popularized", the co-ordinating capability of EPB was being diminished.

In part, the turn to decentralization was simply a recognition of the increased influence of various ministries on policy making. In addition, decentralization made good economic sense. Thanks to its rapid development, the economy had become fare more complex than it was at the start of the second five-year plan. In 1965, manufacturing industry had been characterized by some small, mostly traditional plants in a few sectors and few or no plants in other sectors. Technical expertise in several industries was either sorely deficient or entirely lacking. At that time it was, therefore, not unreasonable to find central planners dealing with choices at the project level; their relative lack of technical expertise was marginal. Having the added advantage of an overall perspective on the economy derived from the sectoral model, central planners probably had an edge over any potential specialists in industries that were not well established. By 1970, the industrial structure had become more complex, and a new cadre of managers, technicians and industry specialists burgeoned. The central planners could now rely on these specialists for technical information about production techniques and for market information. Furthermore, the increasing structural complexity of the economy was gradually making macroplanning, based on the gross relations of a medium-size input-output model, less useful in drafting policies regarding specific investments.

From their experience with the formulation of the second five-year plan, the central planners now believed that one of planning's greatest benefits was increased knowledge about one's own area of policy responsibility. Planning *qua* education could contribute most directly to decision making if performed by executing agencies. Furthermore, there was a genuine interest in planning in the lower echelons in several agencies, (Planning closer to the ministerial level of the organization chart tended to be more window dressing than anything else.) EPB used its own personnel to train groups of planners in other agencies, particularly those in the Ministry of Agriculture and Fisheries, where better econometric forecasting techniques were greatly needed.

Methodology of planning

Two major planning needs were recognized: *(a)* the guidance system to be used by the Government to co-ordinate the activities of the private sector had to be devised; and *(b)* the investment projects to be undertaken by various ministries within the Government had to be determined and co-ordinated. The first task was performed largely in EPB (or by EPB consultants); special studies centring around instruments of policy, sectors, or key features of the economy were commissioned. The second task was broken down into two elements: (i) project identification and formulation, to be performed in the various ministries; and (ii) project appraisal and co-ordination, to be performed at EPB.

The guidance system

As a result of the experience with the second five-year plan, the planners desired to build flexibility into the third five-year plan. They were distinctly opposed to establishing a list (partial or complete) of investment projects to be undertaken during the plan period or a detailed set of sector-by-sector investment targets. Investment allocation was still an important issue, but the plan's role in achieving an efficient allocation of investment was both to be indicative and to establish an appropriate set of incentives that would lead private decision makers to the right decisions. The purpose of project appraisal was simply to determine where incentives to investment should be given and what "social prices" should be attached to the benefit-cost criteria that were to be suggested for use in the plan. The plan document was to focus on policies and on criteria for making decisions rather than on specific investment allocations.

The second five-year plan had been formulated on the basis of a multisectoral planning model. This model was all but discarded in formulating the third five-year plan. Out of their frustrations with resource planning and their recognition of the economy's greater complexity and unbalanced growth, the EPB central planners turned to incentive planning in formulating the third five-year plan. In addition, they reasoned that incentive planning would be of greater value to policy makers and that thereby a strategy based on it would eventually lead policy makers to devote more resources to planning.

The planners were, however, at somewhat of a loss as to the planning procedures to be followed, largely because of the virtual non-existence of comprehensive incentive-planning techniques at that time. The only element that was selected promptly and fully exploited was a macro model. The data were by then sufficiently accurate to justify the use of such a model to investigate alternative growth paths and certain policy issues (most important being the level of the exchange rate). Progress towards building a sectoral model was halting, and little effort went into the estimation of the parameters in the model. The rationale for using a sectoral model changed from that of preparing a detailed investment allocation to that of obtaining accurate forecasts of aggregate magnitudes. The remainder of the planning procedures employed by EPB consisted on the one hand of communicating with the ministries concerning their own programmes and on the other of commissioning special studies.

The special study has always been a key element of policy advising in the Republic of Korea. It became even more important in the preparation of the third five-year plan. Special studies were carried out to estimate effective protection rates

(to examine incentive policies), to forecast imports and exports (to help formulate balance-of-payment policy), to reappraise the tax structure (to see its impact on incentives and savings), to investigate the flow of funds (to frame policy for avoiding dislocations as United States aid was phased out and domestic savings became more important in the total), to estimate savings rates, to estimate the effects of devaluation on the price level, to estimate capacity utilization rates, to investigate policy on prices of rice and so on.

The special studies varied greatly in quality, scope and impact. The most important were the policy studies on effective protection, taxes, credits and the price of rice. The effective-protection study demonstrated that the effective-protection rates remained low on average, but that they varied substantially among sectors. As a result, a move was made to equalize rates and thereby to reduce allocative distortions. The tax study led to an increase in the progressiveness of the tax structure; the minimum taxable income was raised and the marginal rates applicable to top incomes were increased. The mobilization-of-savings study indicated that the structure of borrowing by firms was heavily biased towards short-term credit and towards foreign loans; as a result, the financial structure of these firms was precarious. The study led to reforms meant to control the inflow of short-term foreign credit. The study on rice-price policy showed that, despite a high domestic price for rice, the farmers were discriminated against. It led to the imposition of a yet higher price for rice and a standby rice purchase arrangement.

The formulation of the third five-year plan lacked the methodological scope and consistency of that of the second five-year plan. Exclusive focus on sectoral analysis in the second five-year plan had led the planners to neglect some issues of vital concern to policy makers. This time the opposite was the case: almost exclusive emphasis on a wide variety of issues endangered the consistency of the plan and underemphasized the necessary investigations of resource allocations to major projects (e.g., in the machinery sector). In formulating the third five-year plan the planners followed a "shot-gun" approach that minimized the role of a consistency framework. The diverse issues of concern to planners in 1970 could not at the time be spanned by a single methodology, and the possible contribution of input-output analysis to many of the pressing issues was at best marginal. To be relevant, planning had to address the various key issues; but the key issues could not be met while repeating the second five-year plan's resource planning exercise. Resources for planning were simply too scarce.

The public investment programme

The major institutions involved in formulating the public investment programme were EPB and the Bank of Korea at the "centre", and the Ministries of Commerce and Industry, of Agriculture, of Education, of Construction, and of Transport on the "periphery". Even though the industrial priorities reflected export potential and labour intensity, the promotion of exports and employment was to be through subsidies and trade incentives rather than through direct public investment. Public investment was to be concentrated in infrastructural investment (transport, electric power, oil pipelines, and a free port facility for duty-free bonded processing of labour-intensive exports, agricultural infrastructure etc.) and in a few large

intermediate goods industries in joint public-private ventures (fertilizer, shipbuilding, an enlarged steel complex). It was thus left to the private sector's response to incentives to realize the goals emphasized in the plan.

As indicated earlier, the initiative for formulating the public investment programme lay with the ministries, and formulation proceeded in a decentralized fashion. The essence of decentralized plan formulation is the transmission of information between planning staff of various agencies and a co-ordinating body. However, passing information about future programmes poses a danger for an agency, since the exposure of an idea in a closed forum invites harsh criticism. As well as requiring the lower-level agencies to pass information upwards to the central planners, decentralized planning requires that various "guidelines" be passed downward. Many of the guidelines that ought to be passed down are highly confidential and politically sensitive. The GNP target growth rate is itself a sensitive figure until finally ratified by the highest councils of government. But even more sensitive are the projected prices of foreign exchange, investment funds and other widely used scarce resources. Projections of these prices must be transmitted to the agencies so that they will be able to appraise various programmes at the appropriate prices. There is substantial risk that a "leak" will occur owing to the number of participants in decentralized planning and the high stakes involved.

The political risks accompanying the revelation of information within a decentralized planning framework worked against the realization of full decentralization in the formulation of the third five-year plan. Ironically, it appears that a strong and secure central force is required to achieve effective decentralization of plan formulation. In the Republic of Korea, the spirit of competition dominates interagency dealings. Only the president, it seems, has the power to force co-operation; and he did not use it. The resulting procedure was a compromise between centralized and decentralized planning, which, as with most compromises on technical issues, retained few of the benefits of either system. None of the key resource prices was given to the agencies, with the result that each planned on the basis of its own price projections. In an effort to ensure uniformity in the internal evaluation of programmes among the agencies, EPB undertook to appraise projects for each agency. As far as the agencies were concerned, project appraisal was a "black box", for the prices to be applied to the major resources were not revealed. This approach enabled the central planners to obtain estimates for the equilibrium prices of the various resources by providing information on the types of project accepted and rejected at different prices for the key resources and on the amount of each key resource that could be profitably used at various prices. The "black box" approach to project appraisal, however, sacrificed the educational value of having each agency evaluate its own projects. In particular, the agencies were unable to see how changes in key prices led to changes in the evaluation of certain programmes. They thereby lost potentially valuable knowledge as to how to respond to changes in circumstances, which reduced the flexibility it was hoped would be found in procedures for planning.

To conclude this part of the discussion: the central planners were solidly behind the establishment of decentralized plan formulation when they began to prepare the third five-year plan. The top policy makers, however, were afraid of the risks involved in decentralized planning and were not convinced of its value. EPB was able to force some co-operation from the ministries by having each ministry prepare its own plan under the direction of EPB staff. Undeniably work on the third five-year

plan was poorly co-ordinated. In contrast, work on the second five-year plan was a model of organization. The extreme centralization of the formulation of the second five-year plan limited the plan's educational benefits to only a few and isolated the planning mentality in the central planning agency. The formulation of the third five-year plan, on the other hand, spread the planning mentality to a wide group of decision makers and gave them some experience as planners.

Lessons learned from the second and third five-year plans

Strangely enough, it was the very success of the second five-year plan that made it obsolete. Accelerated growth occurs inevitably through imbalances. In a non-administered economy, these imbalances generate signals to the relevant economic agents, who then adjust to the imbalances and re-establish the framework required for consistent growth. However, in semi-managed economies, such as in the Republic of Korea, certain key prices (e.g., the exchange rate, interest rate, price of rice) are usually kept arbitrarily fixed. Adjustments to imbalances in the quantities affected must, therefore, occur through a combination of quantitative rationing of scarce resources, administrative allocation of targets, and tinkering with covert adjustments to official prices. It is in the determination of how to adjust these instruments that the primary policy issues of fast growth are to be found. Planning models are built to explore the consequences of balanced, consistent and efficient growth. Rapid growth, if it takes place, is unbalanced, inconsistent and inefficient. If a sufficient range of alternative balanced growth paths is explored with the comprehensive planning model, the adjustments necessary to minimize the costs associated with the emergence of unbalanced growth can be inferred. The exploration of alternatives with the model, however, requires that substantial resources be devoted to planning.

Top policy makers in the Republic of Korea did not find comprehensive planning to be of material assistance either in reaching or carrying out policy decisions precisely because too few resources were devoted to planning. In addition, even fewer resources were devoted to educating policy makers in the potential benefits of comprehensive planning. Very few officials outside EPB understood the sectoral model; they did not know what questions it could answer, and they could not interpret its solutions without the assistance of a technician. Thus, one possible lesson from the Republic of Korea's second five-year plan is not to despair of comprehensive planning too soon.

There are, however, other lessons as well. It may be concluded that comprehensive planning is well suited to the formulation of development programmes in simple economies in which the system of economic controls focuses primarily on direct resource allocation. Comprehensive planning is not the best framework within which to analyse incentive problems, and much of the knowledge gained from comprehensive planning cannot be used except in a command economy.

When the economy becomes more complex, dynamic and responsive to market incentives, planning must provide for flexibility and should be indicative rather than comprehensive. Policy studies well integrated with one another that analyse the

future on the basis of mutually consistent forecasts and under a wide range of alternatives appear better for this stage. Input-output models should be constructed at this juncture merely to provide the basis for the mutually consistent forecasts and should not involve the degree of refinement and disaggregation of the comprehensive planning stage.

Not only must planning be appropriate to the economy in question, it must also be appropriate to the political climate and institutions of the country. The initial period of the second five-year plan was marked by and large by *(a)* public policy formulation by decree; *(b)* centralized decision making; and *(c)* a willingness by both the ministries and the public to subordinate their demands for greater participation in plan formulation to their desire for economic growth. The focus on centralized, comprehensive, detailed resource-allocation planning was, therefore, consonant with the style of the polity as well as with the structure of the economy.

By 1970 the very success of economic growth had generated *(a)* demands for more political participation in plan formulation; *(b)* latent demands for a wider distribution of the economic benefits of accelerated growth; *(c)* imbalances in demand and supply of key resources, leading to a resurgence of inflationary pressures and to potential pressures on foreign-exchange balances; *(d)* vested interests in the perpetuation of the imbalances; and *(e)* a general feeling by top policy makers that the only way these economic imbalances and demands for greater participation could both be accommodated simultaneously was through greater reliance on centralized control of resource allocation. These conflicting demands created conflicting pressures on planning. It is no accident, therefore, that planning techniques adopted in the third five-year plan represented an uneasy compromise between centralized and decentralized planning that involved many elements of direct resource allocation during implementation.

In reflecting about the nature of planning in the second and third five-year plans of the Republic of Korea, one is led to conclude that changes in planning techniques must be adapted to changes in the economic and political setting in which the plan is formulated. The problems faced in formulating the third five-year plan are typical of those arising with successful growth in a reasonably complex, highly dynamic, open economy in which the primary driving force for development comes from the private sector. The experience with the third five-year plan highlights the need for developing practical incentive-system planning procedures that are embedded in an internally consistent, dynamic, general-equilibrium system.[114] It also indicates some of the practical difficulties that arise in applying decentralized procedures in mixed public-private economies.

[114] An appropriate methodology now exists. For a full description of this technique, see I. Adelman and S. Robinson, *Income Distribution Policies in Developing Countries* (Stanford University Press, 1977). The technique is based upon a computable general-equilibrium model. The model operates by simulating the operation of factor and product markets with profit-maximizing firms and utility-maximizing households. Its distinguishing features are: *(a)* it solves for prices endogenously in both factor and product markets; *(b)* its solution is based on achieving a measure of consistency among the actions taken by many actors (households, firms) in their best self-interest; *(c)* it incorporates income distribution, monetary phenomena and foreign trade; *(d)* it is dynamic, with imperfect intertemporal consistency; and *(e)* it allows for varying principles of market clearing and institutional behaviour, as well as various price and non-price policy measures.

Bibliography

Adelman, I. South Korea. *In* H. B. Chenery *and others*, Redistribution with growth. Oxford University Press, 1974.

_____ Strategies for equitable growth. *Challenge*, April 1974.

Adelman, I., *ed.* Practical approaches to development planning: Korea's second five year plan. Baltimore, Johns Hopkins, 1967.

Adelman, I. and C. T. Morris. Economic growth and social equity in developing countries. Stanford University Press, 1973.

Balassa, B. Industrial policies in Taiwan and Korea. *Weltwirtschaftliches Archiv/ Review of world economics* (Tuebingen, Federal Republic of Germany) 106:1:55-77, 1971.

Cole, D. C. *and* **P. N. Lyman.** Korean development: the interplay of politics and economics. Cambridge, Harvard University Press, 1971.

Hatada, T. A history of Korea. New York, Ohio Press, 1969.

Henderson, G. Korea: the politics of Vortex. Cambridge, Harvard University Press, 1968.

Kim, K. S. An appraisal of the high interest strategy in Korea. Williamstown, Massachusetts, Williams College, Center for Development Economics, 1968.
Mimeographed.

Shaw, E. S. Financial patterns and policies in Korea. Washington, United States Agency for International Development, 1967.
Mimeographed.

Westphal, L. E. Comments on multi-sector models for development planning: a survey by Alan S. Manne. *In* M. D. Intriligator *and* D. A. Kendricks, *eds.* Frontiers of quantitative economics, v. 2. Amsterdam, North Holland Publishing, 1974.

Westphal, L. E. *and* **I. Adelman.** Reflections on the political economy of planning: the case of Korea. *Journal of East and West studies/Tongso Yongu* (Yonsei University, Seoul) 95-116, 1973.
Text in English.

Westphal, L. E. *and* **K. S. Kim.** Industrial policy and development in Korea. World Bank Staff Working Paper No. 263. Washington, World Bank, 1977.

09167

VI. Industrial priorities in Turkey*

The purpose of this study is to trace the ways in which industrial priorities are chosen in Turkey and to evaluate the determinants of the allocation of resources within the industrial sector. To do so, it is necessary first to trace both the institutions and mechanisms through which decisions on the goals of industrial policy are determined and then to examine the instruments employed to achieve those goals, their effectiveness, and other policies that impinge upon the behaviour of the industrial sector.

Among the developing countries, Turkey is unusual in several regards: the modern nation-state emerged in 1923, and efforts to achieve higher living standards precede those of most developing countries by a generation; early development policy, in the 1930s, concentrated upon the formation of State Economic Enterprises (Kamu Iktisadi Tesekkulleri—KITs), which continue to play an important part in manufacturing industries, thus giving the public sector a more significant role than in most non-centralized economies; and, despite obvious political differences, there has been a remarkable degree of unity among Turks about the general dimensions of economic policy. These and other factors suggest that it will be useful to start with a brief description of the Turkish economy.

Structure and growth of the Turkish economy

When the Turkish Republic was formed some 50 years ago, it was a predominantly agricultural country with an extremely low *per capita* income. The country had been ravaged by war preceding independence, and the cross-migration of Greeks and Turks resulted in further dislocations.

Reliable data are scarce for the period before the Second World War. The 1920s appear to have been an era of recovery from the devastating conflict of the preceding decade.

The Great Depression represented another setback to growth. Real gross national product remained virtually unchanged from 1929 to 1932, implying a drop in *per capita* income. However, it increased 74 per cent between 1932 and 1939,[115] a significant improvement.

The Second World War resulted in yet another set of severe shocks to the Turkish economy. Real GNP in 1948 appears to have been at most 8 per cent above its 1939 level, implying a sharp drop in *per capita* levels.

*Anne O. Krueger, Professor of Economics, University of Minnesota, and Baran Tuncer, Professor of Economics, Bogaziçi University, Istanbul. The paper was written in 1975 and early 1976, and most statements are therefore based on data for 1974 and earlier years and interviews held in 1975.

[115] National income data are from Tuncer Bulutay, Yahya Tezel and Nuri Yildirim, *Türkiye Milli Geliri 1923-1948* (Ankara University, Political Science Faculty, 1974).

Post-1948 growth in Turkey stands in marked contrast to the period 1923-1948. The average annual rate of growth of real *per capita* income over the period 1948-1971 was about 3.5 per cent. While there were some fluctuations in the rate, with more rapid growth in the early 1950s than in the latter half of the decade, and a fairly steady growth rate of 6-7 per cent in the 1960s, the pace of economic expansion was rapid throughout.[116] Some indicators of the structural transformation that accompanied this rapid rate of growth are given in table 16.

TABLE 16. REAL GNP AND SOME COMPONENTS, SELECTED YEARS

Item	*1950*	*1955*	*1960*	*1965*	*1970*	*1975*
Real GNP (billions of 1968 LT)	38.5	56.6	70.9	90.4	125.2	157.3
Percentage of GNP						
Fixed capital formation	10	14	15	15	21	18
Agricultural production	52	46	44	34	29	28
Manufacturing production	9	10	9	16	16	18
Exports	7	4	6	6	5	4
Imports	8	7	8	7	8	7

Sources: Real GNP, agricultural production, manufacturing production and fixed capital, Devlet Istatistik Enstitüsü, *National Income and Expenditure of Turkey 1948-72* (Ankara, 1973); DPT, *Ekonomik Rapor*, No. 1450 (August 1975), table 2; DPT, *1975 Yili Programi*, table 26. Exports and imports, Anne O. Krueger, *Foreign Trade Regimes and Economic Development: Turkey* (New York, Columbia University Press, 1974), table 1-4; DPT, *1975 Yili Programi*, tables 17, 28 and 30. Exports and imports are valued at the official exchange rate, which presents considerable problems when comparing years with very different real exchange rates.

As can be seen, rapid growth of output was accompanied by a sharp increase in the ratio of fixed capital formation to GNP. With GNP increasing rapidly, the average annual rate of growth of real investment was 8 per cent over the period 1948-1971. As is usual when growth is rapid, the share of agriculture in national income (and employment) fell sharply. Agricultural production itself rose fairly rapidly, however, as real output increased at an average annual rate of 3.5 per cent. It should be noted that Turkey probably has a greater long-run comparative advantage in agriculture than do most developing countries owing to its climate, combined with proximity to Europe. The Mediterranean coast, the Anatolian plateau, and the Black Sea region have distinct climates and make possible a wide variety of agricultural production. Crops range from cotton, tobacco, sugar-beets, citrus fruits and hazelnuts to wheat and other grains. Forestry and production of livestock have also significant potential.

Manufacturing production has also grown rapidly over the quarter century, with its share of output increasing from 9-10 per cent in the early 1950s to 16 per cent in the late 1960s.

For its population of 40 million, Turkey has a remarkably small share in foreign trade. Exports have consistently accounted for less than 8 per cent of output, and even that share has tended to decline somewhat over time. Export earnings actually declined from 1953 to 1958, and they did not reattain their 1953 level until 1964. Imports, by contrast, have held rather steady at 7-8 per cent of GNP. The difference between exports and imports reflected balance-of-payments difficulties and

[116] Data are from State Institute of Statistics, *National Income and Expenditure of Turkey 1948-72* (Ankara, 1973).

borrowing in the 1950s, foreign-aid inflows during most of the 1960s (although foreign-exchange difficulties were also present, especially in the latter half of the decade), and heavy inflows of workers' remittances after 1970.[117]

Turkish exports, like those of most developing countries, have been heavily concentrated in primary commodities, although Turkey has been fortunate to have several major exports—cotton, tobacco, hazelnuts, copper and chrome have all been among the top three exports at one time or another. In recent years, manufacturing exports have increased in relative importance, although they remained less than 12 per cent of total exports until 1970 and reached 33 per cent of the total only in 1973.

Commensurate with the growth of GNP, employment in industry has increased over the post-war period. Its rate of growth, however, has fallen far short of the rate at which the urban labour force has been increasing as the combined result of population growth and of migration from rural areas. Turkey's literacy rate is relatively high among developing countries, and almost all urban workers have completed at least five years of school. Those who continue beyond primary school tend to seek university degrees, thus leaving the labour force with an adequate supply of factory labour and highly trained individuals, but with a dearth of workers having skills lying in between. That problem is not a severe constraint on growth, however, as has been indicated by the productivity of Turkish workers abroad. The availability of jobs in the Federal Republic of Germany and other Western European countries has provided a means of absorbing the excess supply of workers in the industrial sector.[118]

Turkish economic growth has, therefore, been good since 1945. While many problems continue to plague Turkish policy makers and planners, Turkey none the less should be placed in the middle group of developing countries: its *per capita* income in 1975 was about $885 and is growing at a rate of about 5 per cent annually. Prospects for future growth seem satisfactory.

Policies for growth

From the early years of the Republic to the present, two overriding goals of the Government's economic policy have been rapid growth of total output to attain higher living standards and industrialization. Whether industrialization has been perceived as an end in itself or only as a means of achieving rapid growth is an unanswerable question, although current attitudes are discussed in more detail later. For present purposes, what is important is that when choices have had to be made between those two and other objectives the decision has consistently been in favour of the objectives of economic growth and industrialization.

[117] Turkish workers began migrating to Western Europe, and especially to the Federal Republic of Germany, in the early 1960s. By the end of 1973, there were approximately 850,000 Turkish workers abroad. Data on the number of these workers abroad can be obtained in Labour Employment Office, "Yurt Dişinda Işiler, Ücretler ve iş Piyasisi" (Ankara, 1974). Foreign exchange repatriated by Turkish workers rose from $9 million in 1964 to $273 million in 1970 and $1.5 billion in 1974.

[118] While it is not central to the main purpose of this study, it seems evident that the opportunity for Turkish workers in Western Europe will be somewhat more limited in the future. Unemployment may therefore become a more significant problem than it has been in the past.

It is both convenient and conventional to divide the formation of Turkish economic policy into five periods: the period 1923-1932, during which *laissez-faire* policies were by and large pursued; the period 1932-1940, during which a policy of ***étatisme*** was followed; the 1940s, when the disruptions of the war and its aftermath dominated; the 1950s, during which the foundations for later development of the private sector were laid; and the period since 1960, during which planning has been considered the central instrument of economic policy.

Little needs to be said about the early period: the attention of the leaders of the newly independent State was largely directed towards political and social reforms. The sultanate and caliphate were abolished; legal codes borrowed from European countries replaced the Islamic legal system; the Latin alphabet and the international calendar, clock and metric system were adopted. Consonant with the Western model, a predominantly *laissez-faire* policy was relied upon to deliver economic growth. There were several constraints: under the Treaty of Lausanne (1923) the Government was not free to alter tariffs or otherwise intervene in its foreign trade until 1929; the Ottoman debt was continuously renegotiated during the 1920s and constituted a sizeable burden for the economy.

With the coming of the Great Depression and the end of the restraints upon foreign trade policy, it rapidly became apparent that the *laissez-faire* policies pursued during the 1920s had failed to achieve a satisfactory rate of growth and that world economic conditions in the 1930s dictated a change in policy. Simultaneously, as political and social changes in the 1920s were consolidated, the Government was able to turn its attention increasingly to economic affairs. After considerable discussion, ***étatisme*** was enunciated as the means by which development would be achieved: the Government would invest in, and operate, KITs to ensure the desired industrialization and growth. The middle and late 1930s saw the emergence of KITs in textiles, cement, sugar, and several other industries. As seen above, the rate of economic growth increased, but the momentum was lost with the outbreak of the Second World War.[119]

Little needs to be said about the early 1940s, for the war caused severe economic dislocation. The first post-war years were devoted to reconstruction efforts and political change. By 1946 a multiparty system had emerged, and in 1950 the Democratic Party under Adnan Menderes won the elections, thereby removing Ataturk's party from power for the first time since 1923.

The Democratic Party had run on a platform that included a promise to reduce the importance of the KITs and to place greater reliance on private enterprise. Its electoral support came largely from the rural sector. Its early years in power were characterized by massive investments in agriculture, with concomitant mechanization of the Anatolian plateau, a transformation of pasture into wheat land, and, at least until 1953, the emergence of Turkey as a major wheat exporter.

The KITs, however, proved politically impossible to dismantle. In 1954, a disastrous crop year led to a series of changes in economic policy. For a variety of reasons, inflation emerged as a major problem in the following years, and the Government attempted to hold it in check by maintaining price controls on all commodities and letting the KITs absorb large losses, which in turn resulted in the creation of Central Bank credits to cover them and intensified inflation. Inflationary

[119] Two industrial development plans were formulated during the 1930s. Both related only to the industrial sector and not to the entire economy. Only the first was implemented. The second was abandoned because of the outbreak of hostilities.

pressure also accounted for the very poor performance of exports shown in table 16; the drying up of foreign credits, a large burden of indebtedness, and an extreme scarcity of imports led to the adoption of a stabilization-and-liberalization programme in 1958. The Government, however, began to revert to inflationary financing during 1959 and was overthrown in the bloodless, military-led revolution of May 1960.

It was widely believed by the leaders of the revolution and a large segment of the Turkish community that the economic difficulties of the 1950s had resulted largely from "planlessness": the prime minister had been a believer in free enterprise, and investment decisions had been made piecemeal. Government economic activities had not been co-ordinated. Therefore, provision for a State Planning Organization (Devlet Planlama Teşkilati DPT) charged with the responsibility of drawing up five-year plans was written into the new constitution of 1961.

The early 1960s thus mark the transition to the fifth period in policy, during which five-year plans were seen as the major means by which economic policy was formulated and co-ordinated. Since 1963, three five-year plans have been carried out (1963-1967, 1967-1972 and 1972-1977). As is evident from table 16, the rate of economic growth was somewhat higher in the 1960s and early 1970s than in the 1950s, and it is generally accepted in Turkey that planning accounts for much of the difference. Thus DPT was established and organized as a means of achieving objectives which, it was believed, had been somewhat frustrated earlier by the lack of adequate co-ordination.

To be sure, the role and functions of DPT have changed since 1960 as policies and instruments have changed. DPT started as a purely planning body in the early 1960s, but in 1967 became responsible for administering import policies and investment incentives. During the late 1960s, balance-of-payments difficulties were perceived to be a major constraint on policy formulation and thus were a central concern. In the early 1970s, however, the balance-of-payments situation improved markedly as favourable world market conditions combined with a realistic exchange rate, resulting from a devaluation in 1970, lead to a major increase of exports, while workers' remittances mushroomed. Partly because of the reduced severity, if not total elimination, of a short-term balance-of-payments constraint and partly for other reasons, DPT lost most of its administrative functions at this time. Its role in policy planning and programming remained, although somewhat diminished from the earlier days. In the period for which we shall attempt to trace the ways in which government objectives are pursued, DPT was, therefore, somewhat less influential than it had been at an earlier period. As will be seen, however, it remained central to the allocation of resources for industrial investment within the public sector, which, by virtue of the KITs' role, was in itself of great importance.

The State economic enterprises

As mentioned at the outset, one of the ways in which Turkey is distinctive among developing countries is the relative size of the public sector within industry. As can be seen in table 17, the relative importance of the KITs varies from sector to sector and from year to year. KITs are in general much larger than average private-sector firms. Substantial changes in their share of output usually reflect the

TABLE 17. RELATIVE IMPORTANCE OF STATE ECONOMIC ENTERPRISES IN TURKISH INDUSTRY IN SELECTED YEARS

(Percentage of sectoral output)

Sector	*1950*	*1963*	*1967*	*1973*
Food	48	34	42	32
Beverages	98	89	87	60
Tobacco	68	77	88	81
Textiles	42	25	22	17
Clothing	95	75	58	17
Wood products	54	56	43	27
Furniture	0	0	0	32
Paper	90	91	81	69
Printing	15	11	18	8
Leather products	0	0	0	0
Rubber and plastic products	0	0	0	0
Chemicals	9	30	17	21
Petroleum products	100	100	98	90
Non-metallic products	20	38	40	24
Iron and steel	91	86	74	61
Metal products	60	38	32	3
Machinery	78	26	16	27
Electrical machinery and electronics	0	1	1	2
Transport equipment	99	60	39	26
Other manufacturing	0	0	0	1
All manufacturing	51	44	48	37

Source: Uğur Korum, "The structure and interdependence of the public and private sectors in the Turkish manufacturing industry" (1975), table 18.

start of new plants. Until the late 1960s, the shares of the public and private sectors in manufacturing industry were about even. Some observers believed that there was an unwritten rule that each sector should be of similar size, a belief that seems to have been disproved by the 37 per cent share of the KITs in manufacturing output in 1973.[120]

As already mentioned, the KITs were employed as an instrument to restrain inflation in the 1950s, their prices being kept low by decree. Simultaneously, the "planlessness" of the economy enabled the KITs to undertake investments autonomously The result was, of course, highly inflationary, and an effort was made in the early 1960s to gain control over the investments of the KITs and to improve their efficiency. A major issue, and one that has emerged repeatedly since 1950, is how the KITs should be organized to increase their efficiency and lower costs. The State Investment Bank (Devlet Yatirim Bankasi–DYB) and DPT are both heavily involved in determining the level and composition of public-sector investments. Part

[120] KITs are also important in mining (and services), since they have a complete monopoly on most minerals. Several government agencies that are not KITs also play a major role in Turkish economic life. In the manufacturing sector, the Monopolies Administration is important as the sole manufacturer of hard alcoholic beverages and tobacco products; there are major agencies involved in the purchase, marketing and distribution of many agricultural commodities. Only the Monopolies Administration is important in manufacturing, however. The main distinction between KITs and other government economic entities is that KITs are not included in the general budget.

of the motive for that control lies in the setting of industrial priorities, and part originates in the experience of the late 1950s. The problems associated with the organization and functioning of public-sector enterprises are, in principle, somewhat separate from the determination of industrial priorities. In practice, however, the two issues are interrelated, especially when the instruments available to alter private-sector behaviour do not bring about the desired results. For example, when the private sector fails to meet an investment target for a given sector or region, the existence of the KITs gives the Government, and especially DPT, an additional instrument with which to achieve that target.

Economic goals and decision makers

Objectives

As mentioned earlier, increased standards of living and "industrialization" have been the overriding objectives of all governments since the 1920s. The possibility that more rapid growth might be achieved by other strategies has not been contemplated in Turkey; the two goals are regarded as virtually identical. Since this study focuses on the determination of priorities within the industrial sector, that possibility need not be considered here either.

Several concerns have impinged on the selection of priorities within the industrial sector from time to time. They have come up in a number of interrelated contexts—expanding import substitution, encouraging exports, creating employment, acquiring "modern technology," attaining "self-sufficiency," and improving both the regional and personal distribution of income. Each of these is discussed briefly below.

Import substitution

Under the Ottoman Empire, the sultans sold rights to do business, including the right to import, to foreign interests. As already mentioned, the Capitulations were interpreted in the Treaty of Lausanne to mean that the Turkish Government could not intervene in foreign trade before 1929. Memories of the inability to control the instruments of foreign trade, the obvious fact that Turkey did not develop economically under the enforced *laissez-faire* policy, the suspicion that foreign trade benefits mostly foreigners, and a desire that Turkey not be entirely dependent on foreign sources for "essential" manufactures–all have combined to lead to a deep-seated suspicion of international transactions. These underlying attitudes help to explain why import substitution has been a major component of industrial development strategy.

In the 1930s, there seemed little choice but to start industrialization, which, in the absence of manufacturing capacity, was of necessity oriented towards import substitution. In the 1950s and 1960s, the desire for continued rapid industrial growth combined with severe balance-of-payments pressures reinforced the view that industrialization had to be achieved through reliance on the domestic market. These concerns are reflected in the statement of objectives in the second five-year plan:

> "The Second Plan aims at achieving a 7 per cent rate of growth per annum in the economy, and also establishes as a target the realization of radical changes

to ensure and maintain this growth rate. The modernization of economic activities as a whole depends upon the use of modern technology and know-how in agriculture instead of traditional methods, on the one hand, and upon achievement of a rapid increase in the relative share of the industrial sector in GNP, on the other. For this purpose, the output of the industrial sector, which will become the leading sector of the economy during the Second Plan period, will mark an increase of 12 per cent, and its relative share in GNP will increase from 16.3 per cent in 1967 to 20.5 per cent in 1972. To achieve this increase, it is considered imperative to expand the general employment opportunities: to transfer surplus manpower from the agricultural sector into nonagricultural activities; to utilize trained manpower more effectively; to gradually reduce the dependence of the Turkish economy on foreign resources; to alleviate the problems in the balance of payments; and above all, to accelerate the rate of industrial activity in order to attain rapid development, and to promote urbanization parallel with the efforts towards industrialization."[121]

As this quotation illustrates, reduced dependence on foreign resources (which refers to foreign aid) and balance-of-payments improvement were always clearly seen as means towards industrialization and not as ends in themselves.

It would be entirely incorrect to conclude that industrialization and import substitution have been regarded as virtually synonymous. This has resulted primarily from the view prevalent in Turkey that development of manufactured exports is highly improbable on any scale sufficient to increase foreign exchange availability significantly.

Encouragement of exports

If one were to pinpoint a major conflict between objectives within the overall goal of industrialization, it would lie in the emphasis given to import substitution while arrangements are being made for Turkey to enter the European Economic Community (EEC). The first protocol formally indicating plans for Turkish entry into EEC was signed in 1963, and the preparatory period went into effect at the end of 1964. The second agreement initiating the 22-year period of transition to full membership went into effect in stages between 1971 and 1973. Schedules have been prepared for eliminating quantitative restrictions upon trade and for gradually reducing tariffs.[122]

These moves have taken place while import substitution has continued to be emphasized. Although some effort has been made in recent years to encourage exports of manufactured goods, it has been relatively minor compared with that for import substitution.

It can, of course, be argued that failure to balance incentives between exports and import substitutes has been a mistake of economic policy and that it has been the instrument -i.e. import substitution—rather than the objective that has been at fault. To a certain extent that is so. The Turks have been pessimistic with regard to prospects for manufactured exports. If the decision makers became convinced that prospects for exporting manufactures would be rosy if they simply took adequate

[121] DPT, *Second Five-Year Plan*.

[122] Birgen Keleş, "Türkiye-Avrupa ekonomik topluluğu ilişkileri" (DPT, February 1974). (Turkish-EEC relations).

measures, they probably would be willing to take them. None the less, in terms of the strategy actually followed during the planning period in Turkey, import substitution has predominated.

Creation of employment

The Turkish labour force has been growing at a rate of nearly 3 per cent annually. As in most developing countries, concern has been voiced about the ability of those wishing to enter the labour force (and those already in it who might be able to perform jobs with higher productivity) to obtain satisfactory employment. Reliable data on the magnitude of the problem are virtually unavailable. To date, the unemployment that might otherwise have arisen has been eased by the workers who have migrated to Western Europe. In 1973, some 6 per cent of the total labour force was working abroad, which represented more than 40 per cent of the domestic industrial labour force.

All three development plans included employment creation as a major objective. Nevertheless, no specific policies or programmes were set forth to ameliorate unemployment. Employment creation has been regarded as a function of real GNP and industrialization. When employment creation has seemed to conflict with the objective of industrialization, it has been held subordinate to industrialization. The third five-year plan clearly stated that employment creation was to be sought as long as it did not conflict with the rate of industrialization or the adoption of up-to-date technologies.

Acquisition of modern technology

The importance attached to acquiring modern technology is readily seen in the passage from the second five-year plan quoted above. By and large, the only conflict has emerged with regard to foreign investment, as the preference for national independence has led Turkey to discourage private foreign investment to a considerable extent. With that exception, however, the "technology" objective has generally been consistent with the emphasis on industrialization and import substitution, and the relatively low priority attached to export promotion and creation of employment has resulted in a lack of conflict between the objective of acquiring modern technology and other objectives of policy.

Attainment of self-sufficiency

The objective of attaining self-sufficiency is based on *(a)* the distrust of foreign trade and international markets; *(b)* the desire to eliminate foreign aid; and *(c)* a reluctance to permit foreign ownership of productive assets in Turkey. The first aspect has already been discussed.

The desire to eliminate foreign aid, cited in the objectives of the second five-year plan, has given further weight to emphasis on import substitution, both because elimination of foreign aid, which amounted to almost 3 per cent of GNP at its peak in the mid 1960s, would require a slower rate of growth of foreign-exchange expenditures than of earnings and because of the already noted pessimism with respect to export prospects.

By contrast, the reluctance to accept foreign ownership has led to an occasional conflict in objectives. It will be seen later that private foreign investment has been a

relatively small factor in Turkey. It is probably fair to state that a distaste for foreign ownership ranks fairly high in the hierarchy of objectives: investment projects that would have been accorded higher priority had they been initiated by a domestic firm have been rejected when the would-be investor has insisted upon 51 per cent ownership.

Better regional and personal distribution of income

Throughout the planning period, greater equality in the personal and regional distribution of income has been a stated goal of policy. By and large, however, policies adopted in pursuit of that goal did not impinge upon priorities within the industrial sector,[123] and little emphasis was given them compared with the major objectives of rapid growth and industrialization.

In the period of the third five-year plan, however, somewhat greater attention has been given to the regional distribution of industry, and measures are being taken to promote industrial development outside the major industrial areas.[124] That objective may conflict with efficiency and growth in some circumstances. Means employed in seeking to disperse industry are discussed below. In attempting to redistribute industry, decision makers appear to have recognized that trade-offs between objectives are necessary. In other instances, a single objective has generally dominated policy decisions, so that the problem of trade-offs has not arisen.

Influences on policy

Focus here is on the mechanisms by which government actions influence the allocation of resources among industries. Governments, however, are not monolithic, nor do they act in a vacuum: decisions are influenced by various groups, within government and outside it. It therefore seems appropriate to describe first the major institutions within government and their interests in, and influence on, policy. Thereafter, the private sector and foreign parties involved in decision making are introduced.

Government

Turkey is a republic, subject to a constitution. Parliament is popularly elected, with a National Assembly and Senate. The Government consists of the prime minister and his cabinet, and it must have the support of a majority of the National Assembly. As mentioned earlier, Turkey experienced a revolution in 1960, after which political parties were reorganized and a new constitution was adopted. Since 1960, there have been two major parties and several minor ones. In general, the two major parties have received 75-85 per cent of the total vote (and generally a higher percentage of seats in Parliament), fairly evenly divided, so that coalition governments have often resulted in which one or more of the smaller parties has played a key role.

[123] Efforts have been made to improve health, education and transportation in disadvantaged areas. Concern here is with industrial priorities.

[124] In 1965, 22 per cent of Turkish income was concentrated in the East Marmara Subregion (which includes Istanbul), which has only 12.5 per cent of the population.

For present purposes, it is sufficient to provide only a brief description of the two major parties. The Republican People's Party (Cumhuriyet Halk Partesi CHP) and Justice Party (Adalet Partesi AP) have vied for power since 1961. CHP won the plurality of seats when an election was held in 1961 to turn the government back to civilian, democratically elected rule. Under Prime Minister Inonu, CHP led three coalition governments from 1961 until 1965, when AP won a majority of seats in the election. Suleyman Demirel became prime minister and remained in power until 1971, when he resigned under pressure from the military. There followed a series of coalition governments until the election in 1973, when a government was formed under Prime Minister Bulent Ecevit, who had led CHP to winning a plurality in this election. Political instability has continued with a succession of governments. The Cyprus issue has, of course, been at the centre of political concerns, so that economic policy questions have remained in limbo in recent years.

The differences between AP and CHP are not entirely clear-cut. In general, AP has had more rural support and less urban support than CHP. AP has been more favourably inclined towards the private sector and free enterprise, while CHP has traditionally favoured a somewhat larger role for government in the allocation of resources.

In the period on which our study focuses, AP has predominated in terms of economic policy. Compared with the 1950s and early 1960s, a somewhat greater reliance has been placed on the private sector and on the market mechanism, although, as will be seen, government intervention abounds.

Before turning to the various ministries, a word is in order about the role of the armed forces. The military has long played a paternalistic role, regarding itself as the guardian of the traditions of Atatürk. In that role, it has intervened twice with the parliamentary process when it believed that the underlying situation required it. The first occasion was in 1960, when it led the revolution, after which a new election was held and civilian government restored. The second intervention was in 1971, when the prime minister was pressured to resign. After 1973, direct military influence again waned. However, the fact that the armed forces can intervene makes them a pronounced force in political decision making. The military-backed government was in power when the third five-year plan was formulated. It is difficult to trace the influence of the armed forces in economic policy, and no attempt will be made to do so here.

Within the government, DPT plays a central role in economic policy formulation. It is supervised by the prime minister or the deputy prime minister, depending upon the wishes of the prime minister, and it is headed by an undersecretary. Technically speaking, it consists of two bodies, the High Planning Council and the Planning Central Organization.

The High Planning Council is composed of four ministers headed by the DPT supervisor and usually including the finance minister. In addition, the undersecretary of DPT and the heads of three departments described below are members, bringing the total to eight in all. The High Planning Council is responsible for recommending the five-year plans and annual programmes – the key co-ordinating instruments of economic policy – to the government, and thus plays a crucial role in setting priorities. It also reviews reports on implementation prepared by the DPT staff and recommends measures to the government.

The Planning Central Organization is divided into three departments, the heads of which are members of the High Planning Council as described above. These are the

Economic Planning, Social Planning, and Co-ordination Departments. As their names suggest, the first two are responsible for preparing the plans and Annual Programmes, carrying on research and analysis, and recommending policy in their respective fields, while the third is charged with following up the plan implementation and also with co-ordinating the work of various government agencies. As of the end of 1975, DPT had a professional staff of 205, distributed as follows (per cent): Economic Planning Department, 38; Social Planning Department, 24; and Co-ordination Department, 21.[125]

Three ministries also play a considerable role in decision making: the Ministry of Finance, Ministry of Industry and Technology, and Ministry of Commerce. While many ministries are concerned with specific aspects of economic decision making and implementation (e.g., agriculture, energy and natural resources), they do not significantly affect general policy. The Ministry of Finance has traditionally been the prestigious ministry, attracting many of Turkey's most able civil servants, and vying with the State Planning Organization for control over economic policy. The Ministry of Industry and Technology is important for present purposes, both because it administers many of the investment incentives currently affecting the direction of industrial growth and because it supervises the industrial KITs. The Ministry of Commerce is instrumental in formulating foreign trade policy, implementing export incentives and determining agricultural support policies. In the 1960s, its influence was more limited than at present.

In addition to the ministries, other government bodies play a role in setting industrial priorities. Chief among them are the Central Bank, DYB, and the KITs.

The Central Bank had relatively little power in the 1950s. Its position was strengthened in the 1960s, through both the changes effected by the revolution and its power to issue foreign exchange licences and administer exchange control. It retains some of its increased importance at present, although the liberization of foreign-exchange licensing since 1970 has reduced its role considerably. It has one additional role that significantly influences resource allocation within the industrial sector: to ration credit. The Central Bank has a major responsibility for allocating credit to the various branches of industry and for setting guidelines for allocating credit to individual firms. Interest rates have generally been a little above, and at times below, the rate of inflation.

DYB requires little comment. When the financial structure of the KITs was overhauled in the early 1960s and their debt consolidated, DYB was established to lend to the KITs on the basis of their credit-worthiness. It was intended that the KITs would have to find financing for their investments before they proceeded with them. DYB is therefore an agency that affects the allocation of resources within the public sector.

Finally, the KITs influence resource allocation both directly through their own investments and also indirectly as their staffs interact with officials in DPT and in other ministries. All investments undertaken by the KITs must first have DPT approval. To the extent that they have funds available from their own operations, the KITs can finance their own investments, but they usually depend upon outside

[125] In the late 1960s and early 1970s, DPT also had a fourth department, which was responsible for implementing the export and investment incentives set forth in the plans and Annual Programmes, but the implementation functions were transferred to the Ministry of Industry and Technology and Ministry of Commerce in 1971. Also in 1971 the Department of Development of Unfavoured Regions was established by government decree.

financing for a large fraction of their investment projects. Thus, in addition to the role DPT plays in approving projects initially, DPT and, to a lesser degree, DYB influence decisions at the financing stage.

Private sector

The private sector naturally has a variety of concerns about the direction of economic policy. It can and does influence decisions both officially and unofficially.

Until recently, the major official mechanism was the Union of Chambers of Commerce and Industry, an organization of private-sector firms. Each industrial sector had its own chamber, organized regionally. When meeting together in Ankara, the chambers constituted the Union of Chambers. The Union represented private-sector interests officially in several ways. For example, when foreign exchange was scarce, the Union was represented on the interministerial committee that allocated foreign exchange among competing claimants. It took the private sector's foreign-exchange allocation and allocated it among firms for quota-list imports.

The Union of Chambers lost a great deal of its official influence in the early 1970s. When the import-licence allocation function was transferred to the Ministry of Industry, foreign exchange became more plentiful, and a variety of objections to the way in which the Union had operated were voiced. Although the Union has retained some influence as a spokesman for the private sector, other private-sector organizations have sprung up, such as the Association of Industrialists and Businessmen; and they, too, speak out on economic policy issues and represent private-sector interests.

In addition to industrialists, there are, of course, the labour unions with their own stake in the direction of economic policy. In general, the labour unions have been concerned with higher wages, collective bargaining rights, retirement benefits, and other issues affecting working conditions and rewards. To the extent that unions have affected wages, they may have influenced the relative profitability of various industries and thus resource allocation within the industrial sector, and, perhaps, the choice of technique. However, it is difficult to trace any direct union interests in the composition of industry. While labour unions undoubtedly influence other aspects of economic policy, they should probably not be considered a contributing factor to the determination of priorities within the industrial sector.

Foreign influences

In the late 1950s and throughout the 1960s, Turkey received large amounts of official credits from aborad. In 1962, the creditor countries organized a consortium under the sponsorship of OECD. The United States of America was by far the largest contributor in the consortium, followed by the Federal Republic of Germany. The United States Agency for International Development (USAID) also maintained a regular office in Ankara. In the mid-1960s, when the flow of foreign credits was at its peak, the credits channelled through the consortium averaged $250 million annually. In addition, Turkey received bilateral credits outside the consortium, mainly from the Union of Soviet Socialist Republics and Japan, as well as credits through multinational channels, mainly the World Bank.

Even though it is difficult to pinpoint, credits of that magnitude 28 per cent of imports were covered by official credits in 1968 must have resulted in a certain amount of foreign influence on resource allocation. For one thing, the Turkish priorities were always a subject of discussion in the consortium meetings. More important, no less than 40 per cent of consortium credits were for projects where the creditors had a strong say on how their credits were to be used. Project financing can be illusory in its effect on resource allocation, since the availability of credit for a particular project releases domestic funds. The relatively easy access to such credits none the less must have influenced the pattern of investments, especially when foreign-exchange problems were severe.

In more recent years, official credits to Turkey have declined sharply, and the consortium has lost is importance. The World Bank and some project credits are still a factor. World Bank aid to the industrial sector has been channelled almost exclusively through the Turkish Industrial Development Bank (Türkiye Sinai Kalkinma Bankasi TSKB).

As already indicated, a great deal of suspicion of private foreign investment exists in Turkey, and private foreign firms have very little influence. That private foreign investment is not actively sought may, of course, affect the composition of industrial output, as will be seen later.

Determining industrial priorities: the planning stage

The five-year plans, whose formulation is the subject of this section, set the basic targets, in terms of both macroeconomic magnitudes and specific sectoral investments and outputs, for the entire plan period. Although some annual totals are given, little attention is devoted in the plan to the timing of the investments or of output over the period.

Once the plan is drawn up and accepted by Parliament, the Annual Programmes are prepared. The plan remains a key document throughout the programming and implementation stage, and its provisions affect both the Annual Programmes and the incentive measures in a variety of ways. The Annual Programmes contain a list of the projects to be undertaken (or continued) during the year, and the amount of investment expected for each for the public sector, as well as the anticipated sectoral investment levels. It also contains a list of the specific promotion measures, and the industries to which they will apply, for the private sector. The implementation stage then consists of the financing arrangements for the public sector and the granting of the appropriate incentive mechanisms to the private sector, including investment incentives, foreign exchange, export incentives and credit arrangements.

Industrial priorities in the five-year plan

Table 18 gives the distribution of industrial investment targets by sector in the three five-year plans and compares them with the actual distribution of output in the base years (1962, 1967 and 1972) used for each plan period. The data clearly show

TABLE 18. PLANNED INVESTMENT ALLOCATIONS IN THE THREE FIVE-YEAR PLAN PERIODS

	First five-year plan			Second five-year plan			Third five-year plan		
		Percentage of			Percentage of			Percentage of	
	Planned investment (million 1965 LT)	Industrial investment	Output in base year, 1962	Planned investment (million 1965 LT)	Industrial investment	Output in base year, 1967	Planned investment (million 1971 LT)	Industrial investment	Output in base year, 1972
Food products	994	7.8	36.2	1 850	7.4	29.2	4 870	5.6	24.8
Beverages	159	1.3	1.9	320	1.3	1.8	500	0.6	1.2
Tobacco	209	1.6	5.3	190	0.8	3.7	400	0.5	4.0
Textiles and clothing	1 563	12.3	18.8	2 400	9.6	18.2	8 750	10.1	16.5
Forest products	269	2.1	4.0	440	1.8	3.8	1 250	1.4	3.4
Paper	317	2.5	1.0	1 850	7.4	1.0	4 250	4.9	1.4
Printing	162	1.3	0.7	200	0.8	0.9	350	0.4	1.0
Leather products	47	0.4	3.2	150	0.6	2.4	700	0.8	2.0
Rubber products	430	3.4	0.4	700	2.8	1.6	700	0.8	1.4
Plastics	108	0.9	0.5	235	0.9	0.7	400	0.5	1.0
Chemicals[a]	1 829	14.4	3.6	4 250	17.0	4.7	3 850	4.4	6.1
Petrochemicals			0.0			0.1	4 650	5.3	0.4
Petroleum products	782	6.2	7.1	1 150	4.6	7.8	6 750	7.8	9.1
Fertilizer[a]			0.2			0.4	4 670	5.3	0.9
Cement	633	5.0	1.2	950	3.8	1.4	2 060	2.4	1.7
Clay and cement products	191	1.5	0.9	60	6.2	0.9	480	0.6	1.0
Glass	174	1.4	0.7	240	1.0	0.7	650	0.7	1.1
Ceramics	290	2.3	0.1	40	0.2	0.3	270	0.3	0.3
Iron and steel	2 752	21.7	3.1	4 200	16.8	7.0	15 400	17.8	6.9
Non-ferrous metals	115	0.9	1.1	1 500	6.0	1.5	7 450	8.6	1.6
Metal products	667	5.2	3.3	1 150	4.6	3.3	4 100	4.7	3.1
Machinery	302	2.4	1.4	1 550	6.2	2.3	6 700	7.8	2.2
Agricultural equipment	34	0.3	0.4	150	0.6	0.9	1 550	1.8	1.3
Electrical machinery	272	2.1	0.6	450	1.8	1.1	1 550	1.8	1.1
Electronics	30	0.2	0.4	150	0.6	0.4	1 550	1.8	1.0
Highway vehicles	152	1.2	2.9	350	1.4	3.0	1 080	1.3	4.6
Railway equipment	137	1.1	0.6	110	0.4	0.4	300	0.4	0.5
Shipbuilding	85	0.7	0.1	350	1.4	0.2	1 020	1.2	0.3
Total	12 703			24 985			86 250		

Source: Base year outputs from DPT, *Third Five-Year Plan*, table 189 at 1971 constant prices. Third five-year plan investments from table 190. LT 1,500 million allotted to small business is omitted from the total. First five-year plan and second five-year plan investments are from *Second Five-Year Plan*, table 199. Aircraft repair and maintenance investments of LT 17 million in the first five-year plan and LT 15 million in the second five-year plan are omitted from the table.

[a] Fertilizer investments in the first five-year plan and second five-year plan were included in the chemicals sector.

the consistent drive towards import substitution. At the outset of the first five-year plan, 62 per cent of industrial output was in the traditional industries of food, beverages, tobacco, and textiles and clothing. Even at the start of the third five-year plan, 47 per cent of output originated in those four sectors. By contrast, planned investment in them constituted 16.6 per cent of total industrial investment.

In the first two plans, the decision to emphasize import substitution resulted from both the belief that export growth would be inadequate to finance the anticipated imports of capital goods and intermediate goods and the view that diversification of industry and acquisition of modern techniques were essential to any industrialization strategy. The goal of industrialization was virtually equated with import substitution, since it was assumed, with a considerable degree of truth, that the four traditional industries could not possibly find markets for their production if the lion's share of industrial investment was allocated to them. The possibility that new investments might focus on some expansion of output for export from traditional industries and selectively on new industries whose size would, almost from the outset, permit them to develop significant export markets was not seriously contemplated.

It is really not possible to take issue with the view that some import substitution should have taken place in Turkey over the three five-year plan periods. What can be questioned is the extent of emphasis on import substitution and the relative inattention to efficiency that resulted. The economic costs of the alternatives will be discussed later. What needs to be emphasized here is that there was a consensus within Turkey about the desirability of import substitution. Despite Turkey's commitment to enter EEC there was virtually no dissent from the general import-substitution orientation of the three plans; and academicians, planners, politicians and bureaucrats alike all supported the general thrust of policy.

The approach used in setting sectoral targets has been much the same in each plan. It will be convenient, therefore, to focus upon the method of preparing the third five-year plan, with only a brief indication of the techniques used in the first two plans.

In the first five-year plan, the basic technique was well described in the plan itself:

> "In order to determine production targets by sector a fifteen-sector input-output table was constructed.
>
> "Total final demand was divided into seven groups, and for each group appropriate means of analysis were used. These groups comprise private consumption, exports, competitive imports, private investments, public investments, and changes in stock. Private consumption the most important component of final demand was estimated on the basis of the income elasticity of consumer demand over the last ten years . . . ."[126]

Intermediate requirements were then computed from the input-output table, and sectoral targets computed, with, of course, attention devoted to the particular situation of individual industries, including the existence of excess capacity and foreseeable changes in circumstances.

For present purposes, what is noteworthy is that the estimates of sectoral demand so obtained included estimates of import "requirements". Those import

[126] DPT, *First Five-Year Plan*, p. 118.

requirements, combined with estimates of likely foreign aid inflows and the (exogenously estimated) export levels, indicated that balance-of-payments difficulties were likely to arise. The relative neglect of export potential is reflected in the fact that exports achieved in the first five-year plan were well ahead of the plan's target level. Whereas every effort was made to reduce imports (which were grossly underestimated in the plan), little attention was paid to the possibility of increasing exports.

The second five-year plan was formulated during 1965-1967, at a time when the foreign exchange difficulties associated with the first plan (and an overvalued exchange rate) were at their height. These difficulties were partly attributable to delays in consortium aid flows. Whatever the reasons, foreign-exchange problems received much greater attention in the second five-year plan than in the first. A much better input-output table was constructed, and the interindustry demands derived from it, along with exogenous final demands, were again used in estimating target output levels. Somewhat greater emphasis was given to increasing export earnings, although the emphasis was none the less heavily on import substitution.[127]

By the time the third five-year plan was being drawn up, DPT had acquired considerable experience and had also accumulated a much more satisfactory data base than had been available when the first and second plans were being prepared. Unlike the first and second plans, however, the third plan does appear to have set an industrial priority: emphasis was to be on the development of heavy and defence industry. Naturally, such an emphasis implied continuing reliance upon import substitution. In part, it represented a continuation of the thrust of earlier plans. As can be seen from table 18, the relative importance of production of intermediate goods had increased steadily over the first two plan periods; and continuation of the industrialization thrust, if Turkey was not to shift to an export orientation, probably necessitated an emphasis on the remaining industries, defined as those from metal products on down in table 18.

In response to inquiries about the origins of the emphasis on heavy industries in the third five-year plan, several explanations were given. One was that new industries not developed by the time Turkey was scheduled to enter EEC could probably never develop; therefore they should be stressed in the third five-year plan. A second was that the sectoral targets resulted from the techniques used in plan preparation. Yet another explanation was that the government in power, which was strongly backed by the Turkish military, wanted emphasis placed on heavy industry, with its associated commitment to develop defence industries.

In a sense, these three explanations are not competing but complementary. The commitment to industrialization was, as noted earlier, regarded as being of paramount importance. Although the original agreement regarding entry into EEC has been signed in the early 1960s, the transition stage began in 1973; and the prospect of entry no longer seemed remote. To those committed to industrialization, as almost all Turks were, there were genuine fears that full membership would preclude the establishment of new industries later; it seemed to be "now or never". While it was argued that Turkey had a long-run comparative advantage in those industries, no systematic attempt to assess industrial prospects had been made. It

[127] In the second five-year plan, considerable attention was devoted to the desirability of shifting the composition of investment and of exports towards the industrial sector and away from construction and primary products.

seems likely that the desire for a modern industrial base made for a willingness to start the industries and see what happened.

The fact that the technology of preparing the plans led to the same result was also helpful. If industry was to be a leading growth sector, the logic of any interindustry planning model based upon the home market was that new industries would have to be established; in their absence the growth rate would be inadequate given prevailing income elasticities of demand for industrial goods.[128]

Preparation for the third five-year plan was based on a more complex interindustry model than had earlier been the case. First, a 1967 input-output table was available with 37 sectors, including each two-digit manufacturing industry. Secondly, building on their past experience, the planners developed resource allocation alternatives based upon different target growth rates. In all these alternatives, domestic demands for intermediate goods were derived from final use, itself a function of (income-elasticity-determined) final consumption, exports (estimated exogenously), and investment levels estimated endogenously. Import substitution was exogenously set so as to equate imports with exports, workers' remittances and capital inflows.

Alternatives were prepared for growth rates of 6.9-9 per cent, contrasted with the 7 per cent target that had been set (and attained) for the first two plans. A higher target for the rate of growth naturally implies a higher savings rate and more public investment; in addition, it requires a higher rate of industrial growth, and hence more import substitution and more heavy industry. Despite that, all alternatives emphasized heavy industry – an inevitable conclusion resulting from the logic of the industrialization strategy. The final decision between alternatives was based on the difference in implied taxation, foreign aid and savings targets, and the implied emphasis on heavy industry was not a factor in the choice. Ultimately, the decision was made to adopt as a target a 7.9 per cent annual rate of growth of GNP.[129]

At the plan level, therefore, priority was determined by consensus. There was little, if any, disagreement about industrialization via import substitution. In view of the achievements of the first two plans, a logical next step was to move towards heavy industry targets; at the same time, the prospect of entry into EEC spurred efforts in that direction even further.

The targets for individual industrial sectors set forth in the plans carry considerable weight when the Annual Programmes are prepared. The priorities that are established in the plan, therefore, can be regarded as the outcome of a particular type of commitment to industrialization, combined with the use of input-output techniques to ensure sectoral balances. To the extent that sectoral import-substitution and export targets are exogenously determined, one could argue that there is scope for altering priorities within the framework of planning techniques. In practice, that scope has not been utilized. The remarkable degree of consensus within Turkey on the direction that development policy and industrialization should take

[128] In the absence of foreign trade, industry may grow more rapidly than the agricultural sector simply because of the higher income elasticity of demand for industrial goods. This could be offset, however, if, as resources shifted, the terms of trade turned against industry to encourage substitution in consumption. In an interindustry model of an open economy, where proportionate growth of all sectors implies increasing exports of traditional commodities, only import substitution or a built-in constraint on the level of exports could lead to an above-average growth rate of the industrial sector.

[129] Some of the macroeconomic measures to attain that goal led to skepticism on the part of some observers. Those issues, however, lie well outside the scope of this study.

has thus resulted in a confluence of factors, all pointing to the same selection of industrial priorities.[130]

One other aspect of the plans should be mentioned: the intra-sectoral treatment of public and private investment. Each plan has had separate investment targets for the private and public sectors. Those targets, however, have not been broken down by industry. In the plans there are industry investment totals and a public-private breakdown, but there is no industry-specific allocation between the public and private sectors.

When asked how the breakdown between public and private investment is determined, individuals at DPT respond that at the planning stage it is neither possible nor necessary to have firm numbers for the private sector. Estimates are made on the likely order of magnitude of private-sector investments in industry based on past trends and on the information gathered by the DPT through the "special sector committees." These committees are formed under the auspices of DPT and contain representatives from business, other ministries, KITs, universities and others knowledgeable on particular topics. Such committees are appointed for most industrial sectors. They are asked to prepare estimates of demand, capacity, and related factors for their particular industries and to consider the state of the industry, bringing to the DPTs attention any other particulars that should be considered in formulating the development plans.

The estimates thus prepared for the private-sector investments are then summed, and the total is subtracted from the total estimated industrial investments. However, as already indicated, no sector-by-sector breakdown of investment between public and private firms is given in the plans for manufacturing industry. That task is left to the Annual Programmes.

Programming and implementation in the public sector

The Annual Programmes

The major vehicle for co-ordinating the activities set forth in the plan is the Annual Programme (Yili Programi), which is promulgated by the end of each year to cover activities for the following year. The Annual Programmes cover both the public and private sectors. However, whereas the plans have made very little distinction, at least within industry between public and private activities, there are sharp differences in the way the two sectors are treated. It is therefore convenient to discuss the two separately.

First, however, the manner in which the annual investments for each industry are determined, and then allocated between the public and private sectors, must be

[130] One major exception to the consensus arose regarding the development of assembly industries in the mid-1960s. Many individuals believed that heavy industry should have first priority and that development of assembly industries with their associated reliance upon imported parts and components did not further the growth objective. In the context of the foreign-exchange difficulties that existed in the middle of the 1960s, some of the objections to developing the assembly industries were valid, quite aside from the fact that they had high domestic resource costs. In particular, they became a device for importing commodities, often regarded as luxuries, at a time when the right to import was extremely valuable.

indicated. When investment levels and targets for the following year are planned, the first step is to compare the record of the industry's investment and output performance with plan targets. The actual output and investment figures and the figures contained in the plan are converted into a common price unit by converting the plan targets into prices of the most recent year for which data are available. In the process, minor changes are often made in plan targets, as past performance provides indications that original goals were unrealistically high or low or that other parameters of the plan were wide of the mark.

When past performance in a particular sector is well ahead of the planned levels, investment targets for the following year are generally trimmed back, although not to such a level that no investment would be forthcoming.[131] The converse also happens when investment is lagging behind plan targets. In such circumstances, there are numerous ways to stimulate investment.

DPT also conducts an annual survey of industries in the private sector, designed to provide estimates of private-sector investment planned for the following year. The evaluation of past performance in contrast with the plan and the modified plan targets are then combined to provide initial estimates of private and total investment by sector. A first approximation of public-sector investment can then be derived as a residual.

Those estimates of public-sector investment are then evaluated in the light of known KIT investment plans and proposed projects. For the KITs, a sizeable fraction of investment in any given year is ongoing, and reports from the KITs can establish the likely investment levels with considerable precision. The investment projects the KITs plan to initiate in the following year are then added to the totals. The procedure for selecting and evaluating projects is discussed below.

In many instances, the KIT total combined with the private-sector total comes close to the planned investment target. Then the figures are placed in the Annual Programme; project evaluation is separate. Two other situations can arise, however.

Planned public-sector plus private-sector investments can exceed the level indicated by the revised plan. In such a case, public-sector investments are cut back again. The techniques used to decide which projects to cut are discussed below, although such cutbacks may take the form of postponement rather than elimination. In addition, measures may be contemplated to discourage private-sector investment, and the Annual Programme estimate of private-sector investment may be reduced accordingly.

Planned private plus public investment can also fall short of plan targets. In this case, DPT may call upon the KITs to submit project proposals in the pre-project stage, and such projects may well be included in the Annual Programme. Of course, some rejuggling of the expected investment levels of specific sectors may also result from the discrepancies, as some totals are increased elsewhere to keep total investments at the desired level.

For understanding the means used to determine industrial priorities, what is important is the distinction between the sectors in which the industry is running well ahead of targets and those in which it is lagging behind. The screening criteria applied to projects are much more heavily relied upon in the former case than in the latter.

[131] Obviously, that would be impossible anyway, since there are always many investments in the pipeline. However, industries in which investment is running way ahead of the planned level generally have their investment targets trimmed somewhat, while those running well behind have their targets increased. Realization of the Annual Programme targets would, therefore, imply that industries running ahead of the plan in midstream would still be ahead at the end of it.

In the fall of 1975, textile investment and capacity were running far ahead of the targets established in the third plan; investments in investment goods industries, particularly diesel engines, gear boxes, aluminium, iron and steel, machine tools, petrochemicals and shipbuilding, were running far behind. The programming (and implementation) mechanisms were designed to discourage further textile investment and to encourage investment goods industries; as such, means of project selection differed markedly.

Project criteria

Public-sector enterprises may not invest without approval of DPT. That means all projects must be submitted to DPT for approval and included in the Annual Programme before the KITs may undertake them. Inclusion of projects in the Annual Programme does not guarantee financing automatically. There are three possible sources: retained earnings of the KITs, credits from DYB and allocations from the general budget through the Ministry of Finance. When KITs finance their investment themselves, the DPT review is the only project appraisal occurring, except for whatever is undertaken by the KITs.[132] When DYB or Ministry of Finance funds are required, however, an additional evaluation is made.

About 60 per cent of KIT investments are self-financed, with 20 per cent coming from DYB funds and 20 per cent from the general budget. Since the KITs know which projects are most likely to meet with DYB approval, the relative importance of the DPT and DYB approvals is probably even more disparate than the ratio of their share of the total would suggest.

Projects are submitted to DPT for approval on a form designed to provide the relevant information. It includes an estimate of the sequence of investment and the particulars of the project, including value added, the amount of employment to be generated, foreign-exchange and local-currency expenditures anticipated when the plant is operating, plant capacity and other details.

DPT uses six criteria for project evaluation: *(a)* value added per unit of capital; *(b)* the labour-capital ratio; *(c)* the foreign-exchange implications of the investment; *(d)* the nature of the technology used and the extent to which the proposed investment is of economic size; *(e)* the marketing aspects; and *(f)* the location of the project.

Value added per unit of capital is evaluated at local prices; the differential between domestic and international prices is not used. The evaluation of the labour-capital ratio reflects concern with employment issues. The foreign-exchange implications, and particularly foreign-exchange savings of a project, were a major criterion in the late 1960s. The foreign-exchange shortage, as previously noted, was a central problem of policy at that time, but attention to that aspect of the investment all but disappeared in the 1970s.[133] The criterion concerning the nature of the technology and the economic size of plant increased in importance in the early 1970s. DPT officials and others all indicated that their experts had begun assembling

[132] All KITs formed project preparation units during the 1960s. Projects are prepared by these units before they are submitted to DPT. The specialists in the project departments use project preparation forms provided by DPT.

[133] At the time of writing in 1975, Turkey was again beginning to face a sizeable balance-of-payments deficit.

information on the economic size of firm and that proposals in which the contemplated size was below the minimum were sent back with a request that the proposal be reconsidered. The economic-size-of-plant criterion and considerations of technology are also important in their effects on private-sector investment incentives.

The marketing aspects of the proposal seem to pertain primarily to the realism of the input and output prices envisaged for the project. In general, at the evaluation stage, a finding that project plans are unrealistic or infeasible is more likely to result in a request for an amendment to the proposal than in any other action.

The location of the project became an important criterion only in the early 1970s. Hitherto, regional imbalances in growth rates and living standards had been recognized as a problem, but little effort was made to reduce the imbalance by shifting the distribution of industrial investments. In the early 1970s, the congestion of the Marmara region surrounding Istanbul and the higher standard of living attained (combined with the apparent easing of the foreign-exchange situation) enabled increased attention to be paid to the regional location of industry. Regional location also became important in determining incentives for private-sector firms.

A notable omission from the list of criteria is the potential of exports. The possibility of KIT exports is not seriously considered.

In addition to the above-mentioned criteria, DPT officials have experimented with various benefit-cost ratios that they might compute, based on the information submitted by the KITs.[134] To date, the ratios have not been used in decision making. Two reasons, not entirely inconsistent, were given for failure to start using these economic criteria earlier: *(a)* it was difficult enough to obtain project submissions at all; and *(b)* project submissions varied so much in their expectations as to results that it would be meaningless to estimate benefit-cost ratios. Certainly, the dearth of well-conceived projects has been a major problem in Turkish planning. As such, the margins of error in the estimates of future streams of outputs and inputs are probably greater than the disparity in benefit-cost ratios.[135]

DPT seems to have used all six criteria in evaluating project proposals. If the proposals have seemed highly unreasonable or improbable, they have been sent back for revision. In general, the result has been resubmission of the proposal, often with significantly increased investment, rather than its abandonment.

Of the six criteria indicated, the one that would most probably lead DPT to return the request (to have it revised) pertains to economic size of plant. On the basis of the available evidence, it would appear that the criterion used is entirely an engineering one, and that issues pertaining to alternative factor intensities are not considered.

However, when the question is asked whether proposals are ever rejected, the answer depends on whether investments are running ahead of, or behind, plan targets. When few public-sector projects are proposed, DPT sends out requests for projects, even for preprojects, for inclusion in the Annual Programmes. In those instances, projects can be included without the usual review, although an evaluation takes place before the investment is started. For sectors (such as investment goods in 1975) where there is a shortfall of investment, therefore, the six criteria have little

[134] Naturally, DPT has the authority to change the information requirements for project submission.

[135] Officials point out that the calculation of benefit-cost ratios is extremely sensitive to assumptions about the rate at which capacity will be utilized.

significance, other than influencing the KITs to submit proposals that show promise of ultimately surviving DPT evaluation.

The criteria increase greatly in importance, however, when the desired (public plus private) investment exceeds plan levels. Then DPT officials appear to choose among the projects and can be much more selective in applying their criteria. There does not seem to be any formula for determining hierarchy among criteria, and it is therefore not possible to indicate the relative importance of each, except to point out that foreign-exchange considerations predominated in the 1960s but were much less important in the early 1970s. "Market considerations" seem to have been directed to ascertaining the reliability of the estimates, rather than to providing a basis for choice. Among the remaining criteria, it seems clear that if a project were to be located away from already industrialized areas, it would be selected over one destined for the Marmara region. Beyond that, little can be said.

The DYB review procedure for financing KIT investments is similar to that of DPT. As already indicated, DYB cannot fund any project that is not included in the Annual Programme. It can, however, decline to fund a project included in the Annual Programme and apparently has done so, usually informally, on several occasions. DYB investment funds from its own resources (i.e., interest on outstanding loans that in turn were financed largely by an initial grant from the general budget) and from pension funds of workers. It behaves like a private bank, considering bankability as the main criterion for lending. In general, it will not lend to a KIT unless the financial rate of return on the project exceeds the rate of interest. In a few exceptional cases this rule is violated. For example, the output of the KIT producing coal was subject at one time to price control. Its proposed investment would have been financially attractive had coal prices been realistic, but with prices artificially low, it was not. DYB none the less financed the project.

DYB apparently evaluates KIT proposals at three levels: technical, financial and economic. The technical review is really a feasibility study and focuses on such factors as the realism of the proposed investment (adequate water supply, transport, site etc.) and its timing. The financial review, which is undertaken only when it is clear that the project is technically sound, emphasizes the financial rate of return as mentioned above. Estimates of an "economic rate of return" are a recent innovation, and, as at DPT, in the experimental stage. It was indicated that, as of 1975, little use had been made of the economic-rate-of-return estimates, which take into account shadow prices of factors, but not divergences between foreign and domestic prices.

Project implementation

Projects set forth in the Annual Programmes are monitored by DPT. All KITs must report every three months to DPT on the status of their investments; DPT maintains a continuous watch on large and significant projects.

It has happened that a project listed in an Annual Programme has never been implemented. That appears to have been the result of the technical infeasibility of the project, or the "unrealism" of the project once a full project proposal was made. Whether "unrealism" includes such considerations as extremely high costs is unclear. There is, however, a strong presumption that projects listed in the Annual Programme will be implemented. In some cases, delays are encountered in starting up, so that a project may be listed several times before work gets under way. The

causes of these delays are not readily apparent, but no doubt include negotiation over the details of the project, obtaining financing, and other aspects that may improve the project from a technical or economic viewpoint.

By contrast, a project cannot exceed the investment limit set by DPT without its express approval. DPT has the authority to permit an increase in expenditures of up to 30 per cent. Overruns of more than that amount must be approved by the High Planning Council. It appears that projects, once started, are not abandoned because of cost overruns.

A final question is whether any *ex post* evaluations of the economic impact of projects, particularly of the correlation between the project's properties *ex post* and those contained in the project proposals, have been made. Apparently the answer is negative with regard to the performance of the KITs. By contrast, one such evaluation has been made with respect to the investments in the private sector supported by TSKB. Experience with follow-up evaluation will therefore be examined in that connection below.

Use of criteria in the KIT investments

No clear-cut formulae seem to be employed in evaluating public-sector investment, nor are economic criteria, such as benefit-cost or domestic resource cost (DRC) used when evaluating investment projects. Even when there is an excess demand for investments in a particular sector, judgement based on the considerations enumerated above are applied.

One can view the matter two ways: it may be argued that the entire process of project preparation is wasted, since no formal criteria are applied, or, alternatively, that the process itself brings about an improvement in projects, both because the KITs must submit the necessary data (and know the desiderata that interest DPT) and because informal negotiations are carried out that vastly improve projects.

There is some truth in both contentions. There can be no doubt that the process of formulating a project, ascertaining capital-goods requirements, and otherwise setting forth the details of a project provides a good discipline for public-enterprise managers and prevents the inauguration of some undesirable ventures. Further, discussion between DPT experts and KIT officials probably contributes to the use of labour-intensive techniques, siting of appropriate projects in less developed regions, and shaping investments in the direction desired by the planners.

However, the lack of attention to cost relative to international markets represents a serious weakness in Turkish project evaluation.

Determinants of resource allocation in the private sector

The factors influencing decisions in the private sector are far more diverse and somewhat less co-ordinated than those determining public-sector investment and output. That fact follows naturally from the difference between private and public-sector enterprises; control over the private-sector enterprises is not so direct, and it is often difficult to predict the precise impact on them of the combination of market forces, government intervention, and implementation measures.

The private sector

There is, of course, no such thing as a government that fails to affect the determinants of private-sector output. One would like to know how the private sector would behave in the absence of government intervention, which would then provide a basis for evaluating the impact of government policies and their impact on the private sector. Means of estimating what would happen in the absence of intervention have yet to be devised, but it is none the less useful to start with a description of market forces in Turkey and how they operate within the private sector.

While it may have been true in the 1930s that there was little entrepreneurship potential in the private sector, the growth of a vigorous entrepreneurial group since that time has fundamentally changed the situation. Since 1950, responses to altered incentives by the private sector have become increasingly sophisticated and rapid because of three major factors: *(a)* the numerous pressures that led importers to become industrialists; *(b)* the attraction of developing local resources; and *(c)* the very strong imitative behaviour of Turkish businessmen and would-be businessmen.

Most observers would agree that the first factor was probably the most important in determining the development of new industries. During the foreign-exchange shortage in the 1950s, and even more so in the 1960s, imports especially of consumer goods were drastically curtailed. During the 1960s, curtailment even became prohibition in sectors where domestic production had started. Businessmen who had made their money in importing gradually observed the volume of imports of consumer goods shrinking drastically, while the burgeoning imports of intermediate and capital goods were allocated directly to industrialists.

Whether importers became industrialists because they were lured by the prospects of high levels of protection in the domestic market or whether they saw their profits diminishing and anticipated even worse to come is immaterial. Either way, what seems to have happened is that individuals initially engaged in trading gradually shifted to domestic production. Most of the large industrial holding groups that now predominate in Turkish industry seem to have started with this pattern, often in agreement with foreign companies from whom they had previously imported.

Once holding companies were established, two sets of pressures operated to induce them to extend their activities to other, sometimes unrelated, lines of activity. One was the knowledge that imports of goods would be prohibited as soon as domestic production started and concern that others would start domestic production first. In instances of import substitution of intermediate goods, there appears to have been a concern that if commodities could be obtained only from another large industrial house the production of certain goods within the group's domain might be jeopardized. The other inducement to enter new product lines was that expansion of existing product lines for export had not seriously been considered.[136]

By and large this set of inducements had its origins in foreign trade policy, which will be discussed below. The second factor—the attraction of local resources—has been important in the establishment of certain processing industries. Food-processing industries started in many instances with Turkish agricultural products. Tomato

[136] Devices for allocating scarce bank credit probably furthered this particular force, as will be seen below.

products, olive oil, feed extracted from oilseeds, and numerous other industries developed, some entirely for the domestic market, and a few partly for export. Mineral processing has also been important, especially for copper. Likewise, the Turkish textile industry owes its origins, at least in part, to Turkish cotton.

As for the third factor, imitation, it is widely accepted in Turkey that if a new industry is established by one firm and becomes profitable, many others will rush into it. It is feared that this imitative behaviour will lead to excess capacity. Part of the reason for concern over using "economic size of factory" as a criterion for evaluation of projects arises from the belief that small businessmen will imitate the large firms in small, inefficient and presumably uneconomic plants. "Economic size of operation" is a criterion to which the Ministry of Industries has devoted considerable attention in granting certificates of investment incentives, which will be explained later. This criterion came to the fore in the early 1970s in response to pressure from the large holding companies. Those companies suggested that, once a particular industry was established with sufficient capacity to supply the domestic market, additional firms wishing to enter that industry should not benefit from the investment incentives applicable to it. The Government wished to encourage competition, but apparently believed that there was some truth in the allegation that small firms foolishly invested to the point where excess capacity would develop and all would be profitable. While it refused to accede to the request for complete elimination of incentives once an industry was established which would, in most cases, have pre-empted the field for the large holding companies it compromised by laying down the rule that new investments would have to be of economic size.

It is difficult to evaluate the extent to which "imitation" impairs the functioning of the market. In a healthy economy, as Schumpeter long since pointed out, any highly profitable investment will have its imitators. The lure of high profits, it is argued, is the mechanism whereby market forces increase output in appropriate areas and pull resources in socially desirable directions. If imitation proceeds rapidly, however, and information that others are also investing in capacity is lacking, this healthy market reaction may be overdone.[137] In 1975, it was widely believed that textiles had, in response to their profitability in the period immediately following the 1970 devaluation, expanded with capacity increasing from one million to three million spindles within two or three years. The notion that maintenance of an appropriate real exchange rate might have led to sustained textile exports did not seem to be given much credence.[138]

There is every evidence that the private sector has developed considerably over the past 25 years: responses are more sophisticated, productive capacity has increased enormously, and the range of industries established has widened markedly. The Turkish private industrial sector of the mid-1970s is a far cry from that prevailing a generation ago. Many are willing to assert that a large fraction of private firms could compete with EEC companies, which could not have been said even in the mid-1960s. There is, however, some question about the accuracy of the assertion, especially on an across-the-board basis. The lack of cost consciousness, which has

[137] Some people in Turkey, however, believe that most businessmen are simply ill-informed and do not take the trouble to investigate before investing.

[138] The European textile market was depressed in 1975, which may have intensified the reaction. None the less, many individuals felt that the very great enlargement of capacity would have made Turkey "too dependent" on textile exports even if market conditions had enabled the output to be exported.

pervaded decision making with regard to public-sector enterprises, is also a major problem in the private sector. Much of that lack is owing to the set of incentives with which the Government has confronted it.

The range of government intervention

Virtually every aspect of government behaviour affects the private sector in one way or another. The entire structure of excise taxes, for example, undoubtedly influences the composition of private-sector output in a variety of ways; and a great many other activities, including price supports and intervention in agriculture, social security legislation and price controls all impinge on incentives confronting firms and their responses to them.

In terms of industrial priorities, one can focus on five influences affecting Turkish businessmen: *(a)* the plans and programmes, and the policies set therein, including plans for the KITs; *(b)* the specific incentives given for investment by DPT; *(c)* the trade regime, which affects resource allocation in many ways; *(d)* the financial institutions that deal with the private sector, including the Central Bank, TSKB, and the Industrial Credit and Investment Bank (Sinai Kredi ve Yatirim Bankasi SKYB); and *(e)* foreign influence.

It is difficult to estimate the effect of the plans and programmes on the private sector. They enunciate government intentions and policies and indicate to the private sector the sorts of activities the Government is likely to encourage. As such, they are undoubtedly a consideration when individual businessmen contemplate expansion or new lines of activity. Beyond that general statement, however, little can be said.

One aspect of government planning and programming does, however, have a more clearly identifiable influence: the existence and behaviour of the KITs. For all practical purposes, the existence of a KIT in a particular industrial sector assures businessmen that that sector will receive favourable treatment, and that price policy will be advantageous to it. The cynics claim that the KITs are such high-cost enterprises that, once they are established in a certain line of activity, domestic firms are ensured against price reductions in a way that even import prohibitions cannot.

That argument, as given above, is overstated. During the late 1950s, for example, some private-sector firms producing in the same industries as the KITs were virtually shut down because the KITs could sell at controlled prices and make up their losses through Central Bank financing while the private sector had no such alternative and could not produce at prices comparable with those of the KITs.[139] None the less, there may be a certain amount of "hostage to fortune" about KIT investments, and certainly private businessmen do not avoid investments in sectors where the KITs are producing or planning to produce.

Beyond general considerations of that sort, little can be said about the general influence of the plans, programmes and KITs on the private sector. By contrast, the second influence—investment incentives—is highly specific. The incentives and the list of industries to which they will apply are set forth in the Annual Programmes. They can reduce the cost of investment by 50 per cent or more, an important factor in the context of credit rationing with a very imperfect capital market. Of course, the trade

[139] Of course, there was an excess demand for goods, so that black-market activity flourished and the impact on the private sector was not quite as bleak as painted above.

regime has been extremely important in orienting the private industrial sector inwards and by pulling resources towards import-substitution industries.

There remains, then, the credit institutions that affect private-sector financial resources. Since 1950, credit has been rationed. The real rate of interest has been consistently below the market-clearing rate, with the exception of a few intervals of political uncertainty that led to mild and short-lived recessions.

In that environment, allocation of credit for a particular purpose, the transfer of credit resources from, for example, the Agricultural Bank to TSKB, tends to pull resources towards that sector to a greater extent than would happen in a more market-oriented financial system. To be sure, credits are still fungible to the extent that businessmen borrow for the purpose for which they can obtain loans and self-finance projects that are perhaps less creditworthy.

The distribution of credit tends to be based on past allocations and to be across the board. The Central Bank sets a limit on borrowing for individual enterprises, generally at 60 per cent of the firm's net worth. If a business is losing money, its credit allocation may be reduced, while a highly profitable business may receive an allocation somewhat greater than 60 per cent, but the exceptions appear to be rare, and *pro rata* allocations seem to be the rule.

Policy makers have been conscious of the lack of a well-functioning capital market in Turkey; and, in 1972, the Central Bank decided that allocation of funds to medium-term credits would improve the situation somewhat. It was therefore decreed that at least 10 per cent of bank loans be medium-term. That undoubtedly pulled resources towards private industry, but no priority was established among industries.

In addition to the Central Bank's role in allocating medium-term credits and in establishing leading limits for individual businesses, two financial institutions deserve mention, TSKB and SKYB. TSKB finances about 20 per cent of all industrial private investment in Turkey, and is therefore of considerable importance, given the sizeable share of self-financing in the total. TSKB has had considerable experience using various criteria for project evaluation. SKYB also provides credit to private industry, but is much smaller than TSKB.

The final factor - foreign influence - has affected Turkish business in a variety of ways. Private foreign investment will be discussed later.

Interaction of public and private enterprises

Private enterprises in an industrial branch in which KITs have been established obviously operate in an environment different from what it would be if the industrial branch fell exclusively in the private sector. Some of those ways have already been mentioned, as for example, the fact that KITs may guarantee good treatment for private industry in the same industrial branch. The imitative behaviour of Turkish entrepreneurs, referred to above, has been observed where a KIT has begun operation in a particular field.[140] Perhaps more important, the KITs are subject to a pay scale imposed by the Parliament on all civil servants. Most college graduates are originally employed by the Government. The private sector can then afford, with its greater

[140] Conceivably public-sector investment has also initiated private-sector investment, but no instances were reported in interviews.

pay flexibility, to choose from among them after they have had some experience and demonstrated their abilities. This phenomenon has led some observers to suggest that the KITs may serve as a training ground for private enterprise. However that may be, it is not apparent precisely how the presence or absence of such a phenomenon would affect the allocation of resources among industries.

The question remains as to the extent to which the existence of public economic enterprises affects resource allocation within the private sector. The first point to note is that the presence of KIT production in a particular sector does not prove that resources have been pulled towards that sector: it may, instead, be that private-sector output would be greater in the absence of the KIT, particularly where public enterprise is a sizeable fraction of the total. Private-sector output would undoubtedly be even greater in the absence of the public sector in that industry, and the fact that the public sector produces textiles does not prove that resources have been pulled towards that industry.

However, as already seen, public enterprises are used to encourage investment in industries where the private sector seems to be failing to meet plan targets. The investment-goods industries of the third plan have already been cited as a case in point. Whether public-sector investments in those industries will represent forerunners of later private-sector investments, or whether heavy industry will remain solely in the domain of the public sector, remains to be seen.[141]

The Turkish Industrial Development Bank

TSKB, Turkey's development finance corporation, is an important source of investment funds for the private sector. As already seen, it has financed about 20 per cent of all private industrial investment in recent years. In many ways, its influence has been even greater than that figure would indicate, for it has provided technical assistance, foreign exchange and support for critical firms and sectors. Its experience is of interest in itself because its lending and financing decisions have constituted a significant influence on the composition of private-sector output; in addition, its relationship with government institutions, particularly DPT and the Ministry of Industry and Technology, provides an interesting example of the way priorities are translated into practical decisions in Turkey.

Perhaps even more significant, TSKB has been applying one variant or another of an economic investment criterion since 1968. Its experience with project evaluation, prospective and retrospective, therefore deserves consideration, both because it is really the only institution in Turkey that has systematically attempted to base its decisions on that criterion and because its experience may be relevant with regard to the potential applicability of alternative investment criteria by other agencies and countries.

[141] The fact that textile production occurs in the public sector that would otherwise be in the private sector now does not prove that resources were not pulled towards textiles when public-sector textile production began. In fact, there can be little doubt that the establishment of Sumerbank, the KIT for textiles, represented a resource pull in the 1930s. It is perfectly possible, and indeed should be expected, that some industries will be unprofitable at one point along the development path and profitable (and economic) at a later date. That an industry is viable at a particular time does not prove that the initial investment was economically sound when it was made.

TSKB and government priorities

TSKB was established in 1950 with the support of the World Bank. Its funds have come from the World Bank, the Turkish Government (which participated in its original financing), domestic equity, sales of bonds on the domestic market and its own profits. Although a private bank, its management has long since recognized that it plays a quasi-official role. In its early years, the bank was preoccupied with obtaining well-developed project proposals; inadequate project preparation was the chief problem with which the bank staff and prospective borrowers wrestled. In the late 1950s, when economic conditions in Turkey were, as already mentioned, unstable, the bank grew slowly and had little influence. In the early 1960s, a period of much more rapid growth began. The bank's earlier experience with project preparation and evaluation placed it in a much better position to carry out its mission. With the introduction of the first five-year plan, the Board of Directors announced its intention to allocate its loans among industrial sectors in accord with plan targets. A similar resolution, passed at the outset of the second five-year plan, in 1967, read as follows:

> "In the distribution of resources among the industrial sectors, efforts shall be undertaken to ensure the concordance with the Annual Programmes of the Development Plan."[142]

Its investment priorities were therefore oriented towards import substitution in accord with plan targets. As explained by TSKB,

> "...over the second decade [of its operation], the loan allocation was directed away from simple industries to more and more complex ones in which, more advanced technology was applied. Textile industry still retained the first row but was closely followed by the cement, stone-earthenware, glass and china ware industries; while the financed projects related with iron-steel, metals other than iron, metal products and machinery subsectors, which were very few in number during the preceding decade, reached substantial levels. In this period, consumer goods industry accounted for 32% and the intermediary goods industry for 47% of the aggregate loans, and the share of the investment goods industry in the total loans increased from the last decade level of 7% to 18%."[143]

In the early years of its existence and throughout the 1960s, a very high fraction of total bank lending went to businesses located in Istanbul and the Marmara region, an area that enjoys a much higher income than the rest of the country. As the small businesses financed earlier by TSKB prospered, further lending to the successful businessmen, even if it was for the purpose of financing new industries in accord with priorities set in the plan or Annual Programmes, necessarily entailed lending to the already wealthy in many cases.

The 1970-1975 period marked a distinct shift in policy. As explained by the General Manager of TSKB in 1974:

> "The Turkish Government has recently started to implement special incentive measures designed to stimulate the investments in the relatively less

[142] TSKB, *25th Year Report* (Ankara, 1975), p. 21.

[143] *Ibid.*, p. 21.

developed regions of Turkey. With the aim of sustaining these incentives, TSKB places priority on the projects of less developed regions and provides technical assistance to the prospective entrepreneurs likely to make investments in these regions."[144]

Several measures were taken that reflected emphasis on development outside the Marmara region: *(a)* regional offices were opened in various parts of the country; *(b)* technical assistance teams were established to assist with all aspects of project preparation and implementation; and *(c)* a department was set up within TSKB to prepare projects that could then be implemented by a businessman in one or more of the underdeveloped regions.

An interview with the manager of the project evaluation department revealed that the effort to develop projects had been in effect for nine months. Over that period, 32 projects were proposed and investigated. Each was given a quick, preliminary evaluation, and some were rejected. Altogether, 16 projects were found to be suitable when the following considerations were used to evaluate them: *(a)* availability of raw materials; *(b)* the existence of competitors; *(c)* the price at which the output could likely be sold; and *(d)* a market sufficiently large to enable a plant of an economic size to be set up. In many cases, the nature of the project changed along the way. Of the 16 projects, 14 had been "taken" by the time of interview, in October 1975.

According to TSKB policy, no project is to be developed for the Marmara region. When a project is developed, the branch offices look for a suitable entrepreneur. Occasionally, a project sits on the shelf until someone comes along.

Since TSKB has made its lending efforts consistent with government policy, TSKB has been left largely independent in carrying out its mission. For example, TSKB has the authority to clear goods through customs. In the late 1960s, when obtaining import licences and clearance to import the necessary goods were significant bottle-necks for many entrepreneurs, the fact that TSKB could grant customs clearance undoubtedly speeded up the completion of more than one investment project.[145] In a similar vein, TSKB will recommend changes in a project submitted to it for financing. When a project is brought to its attention initially, the would-be entrepreneur has normally already obtained the necessary certificates to obtain investment incentives. Often, TSKB will recommend changes in the project, which means the entrepreneur must obtain a new certificate covering the revision. TSKB officials maintain that such approval is automatic and entails no delay; the Ministry of Industry and Technology is said to approve whatever changes TSKB recommends.

To summarize, TSKB attempts to form its lending programme in accordance with the priorities established by the plans and programmes. In so doing, it undoubtedly affects the allocation of resources among industries. At present, it is also having a significant effect upon the location of industries. It thus provides one of the mechanisms through which the priorities established by the plan and programmes are applied and determines some criteria itself.

[144] *Ibid.*, p. 23.

[145] However, there was a period during which all loans of more than $200,000 in foreign currency had to be given explicit DPT approval. That was when DPT was itself handling investment incentives. Such a requirement has been removed, but the willingness of TSKB to tailor its lending programme to government objectives may have been an important consideration in its removal.

TSKB experience with economic criteria

Since 1968, TSKB has computed, or attempted to compute, one or more economic indicators of the desirability of each project. At the outset, an effort was made to use the DRC criterion. DRC estimates were made on all projects under serious consideration. In general (and with later criteria also), there was a cut-off point: projects with a DRC higher than that point were investigated to determine the reasons for it. Usually, a technical flaw was discovered that could be corrected, although projects were occasionally rejected (and sometimes informally withdrawn). In general, the DRC criterion was one that facilitated better project formulation rather than choice among projects.

The DRC proved very difficult to estimate, however, especially when it came to inventories, working capital, domestic prices of electricity and so on. TSKB officials still recall frantic efforts to locate certain key prices, and they estimate that it took on the average 8-10 days of professional personnel time to gather the requisite data for a single project. TSKB therefore shifted to estimating the effective rate of protection (ERP) for potential projects. As with the DRC, the ERP was used as a cut-off, and projects with an ERP above the limit were closely scrutinized. Apparently about a half dozen projects were turned down under the ERP criterion.

Two years of ERP estimation were sufficient to convince the TSKB experts that they should change the criterion again. In 1972, they shifted to estimating an "economic rate of return" requiring the use of border prices which they still employ. This approach may be particularly useful for dealing with problems associated with the timing of utilization of capacity. TSKB experience indicates that the rate of return of projects is extremely sensitive to how capacity is utilized over the life of a project. This consideration may be at least as important as foreign domestic price differentials in affecting an estimation of the rate of return. A misestimate of the rate at which capacity utilization will go, for example, from 30 to 70 per cent, and later to 90 per cent, may be highly significant and yet neither DRC not ERP estimates indicate this effect.

Computation of the economic rate of return involves the use of international prices—still a headache to collect for traded goods, and shadow prices for factors of production, especially unskilled labour.

Table 19 gives data on the financial and economic rates of return calculated by TSKB on some projects it financed in 1974 and 1975. It should, of course, be borne in mind that these data are predicted and may not reflect actual outcomes. As can be

TABLE 19. ESTIMATED ECONOMIC RATES OF RETURN FOR PROJECTS FINANCED BY TSKB DURING 1974 AND 1975 (THROUGH AUGUST)

(Percentage)

Sector	*Rate of return*	
	Financial	*Economic*
Projects in 1974		
Food processing	25	15
Feed	26	. . .
Saw-gin	41	. . .
Machine tools, lathes	16	13
Steel casting	35	12

Sector	Rate of return	
	Financial	*Economic*
Projects in 1974 (continued)		
Bolts and nuts	40	19
Dry-battery cells	28	24
Cement	19	27
Craft sacks	31	...
Asbestos-cement pipes	28	44
Stationery	54	...
Paper board	23	19
Corrugated board	35	25
Carpets	24	18
Wool yarn	28	...
Leather	25	15
Food processing	15	...
Sunflower oil	45	36
Food processing	27	...
Soap	32	...
Food processing	19	33
Food packaging, cans	26	...
Cotton yarn	22	11
Cotton yarn	29	14
Velvet	23	17
Food packaging, cans	28	...
Food processing	...	65
Tomato paste	30	21
Tomato paste	34	23
Fuel pumps	32	32
Agricultural machinery and equipment	27	18
Fuel pumps	23	37
Electronic(s) equipment	30	56
Leather	25	13
Plastic pipes	25	18
Projects in 1975		
Ceramics	33	18
Bottle caps	29	37
Food processing	25	15
Food processing	30	25
Food processing	30	25
Rims for eyeglasses	58	40
Valves	...	...
Bolts and nuts	26	16
Electronic equipment	33	13
Refrigerators	30	18
Iron castings	28	30
Cement	12	60
Bolts and nuts	20	13
Ceramics	24	10
Tie rods	31	15
Worker garments	27	29
Textile (carpet)	25	18
Textile (underwear)	40	45
Forklift	34	16
Power line	26	22
Wood products	46	89

Source: Data provided by TSKB.

seen, estimates of financial rate of return diverge significantly from estimates of economic rates in both directions. For example, the asbestos-cement pipes project was estimated to have an economic rate of return of 44 per cent, compared with a financial rate of 28 per cent, but bolts and nuts had a 40 per cent financial rate of return and only a 19 per cent economic rate of return.

TSKB officials conclude that the use of an economic criterion is extremely important in evaluating new investment projects, for it may help to pinpoint project flaws. In that regard, it is believed that DRC, ERP and the economic-rate-of-return criterion all point to the importance of obtaining investments of an adequate capacity (minimum economic size). Once investments have been made in a particular industry, however, the various properties of the industry that the estimation of economic rate of return helps to highlight are already known, and use of such a criterion will add little new information on investments in expanding plant size or in duplicating an existing plant.

While TSKB officials are willing to give the use of economic criteria credit for enabling them to improve project preparation and occasionally to reject a poor project, they do have certain misgivings. As already noted, the economic-rate-of-return criterion reflects the anticipated rate of increase in capacity utilization once the plant is constructed. The actual financial and economic desirability of a project, however, will depend upon the rate at which the plant is utilized in the initial period following its construction. To the extent that forecasts diverge more widely from actual utilization than the rates themselves vary, use of data based on expectations may simply discriminate between optimistic and realistic project proposals, in favour of the former. This difficulty of estimating the likely bias in the project proposals is mentioned repeatedly by private and public officials in discussing reasons for use and nonuse of economic criteria in project evaluation.

In addition to problems associated with projected rates at which plants would come on-stream, three other problems may be mentioned in connection with the use of economic criteria. First, it is difficult and time-consuming to obtain information on international prices. Secondly, there may not, except for very standardized commodities, be an international price. For example, bargaining may play an important part in determining the price of particular machines. Thirdly, the economic rate of return may not reflect the true export potential of a project for at least two reasons. Even when a project has a high rate of economic return for the export market, exports may not have a positive (or high) rate of financial return. If so, private firms may not be willing to export despite social profitability. In addition, another country may simultaneously be developing capacity to enter the export market, and the Turkish price—even if below "the" international price—may not be lower than the price set by that country. This point, of course, pertains to uncertainty about international prices in general, but is also more specific, in the sense that a single competitor may be able to impinge severely on the local market. Of course, difficulties in using a criterion do not prove that failure to use it would improve the situation.

Industrial Credit and Investment Bank

SKYB was established in 1962 to provide private industry with medium-term investment loans and credit for working capital. Investment credits extended by SKYB have a maturity of up to 12 years with a three-year grace period. In its first

12 years of operation, SKYB credits amounted to LT 2.5 billion, or approximately $15 million annually. Of this total, a little over half consisted of investment credits and some 10 per cent was in foreign currency.[146] The investment credits extended by the bank thus financed about 3 per cent of private-sector manufacturing investments. The textile industry has been by far the major recipient of the SKYB credits, followed by iron, steel, machinery, cement and chemicals.

Reliance upon a criterion for project evaluation seems to be somewhat greater than at DPT, but probably not as systematic as at TSKB. Bank officials rely on rate-of-return estimates, but they also consider the labour-capital, labour-value added, and capital-value added ratios. Projects with rates of return of 26 per cent or more are accepted. If the rate is lower than that, they do not reject the project outright, but instead they estimate a profitability ratio for the project and insist that this rate not be lower than 15-18 per cent.

Foreign private investment

As mentioned above, Turkey's experience in foreign economic relations in the Ottoman period made governments reluctant to accept foreign private capital until the 1950s. The Democratic Party, which came to power in 1950, had a different attitude towards foreign capital and immediately enacted the Law on the Encouragement of Private Capital in 1951. The Law specified the areas open for private investment and limited annual profit remittances to 10 per cent of equity capital. However, foreign capital inflow was very modest, and the Law was liberalized in 1954 in the hope of increasing private foreign investment.

With minor changes over the years, the same Law is still in operation. It does not restrict the areas open to foreign investment, nor does it limit the transfer of profits in any given year. However, to be eligible to invest under the Law's provisions, the would-be investor must obtain an official permit. The Law states that the major criterion for accepting an application is that the anticipated project be "conducive to the economic development of the country". However, in recent years a number of criteria have been added for evaluating applications. They include the requirement that the foreign investment bring in new technology, and that the project have a large enough capacity so that it can compete internationally. Priority is supposed to be given to projects showing a genuine potential for exports. The detailed criteria used in evaluating the applications are determined by DPT, which also has the authority to decide whether the project should be submitted to the Council of Ministers for final approval (the Ministry of Commerce does the procedural work on the applications).

The share of private foreign ownership in Turkish industry has consistently been small, but in certain key industries foreign investment has been significant. Estimates for recent years are not available, but for the period 1963-1965, the share of foreign private investment in private manufacturing investment was only 7.7 per cent. If anything, the relative importance of foreign capital in the manufacturing industry has decreased somewhat since then.

Although the total was small, approximately 75 per cent of private foreign investment over the 1951-1966 period was concentrated in four industries: rubber and tires, pharmaceuticals, electrical appliances, and food and beverages.[147] In the

[146] Industrial Investment and Credit Bank, *1974 Annual Report* (Istanbul, 1975).

[147] Baran Tuncer, "The impact of foreign private investments on the Turkish economy", *The Turkish Yearbook of International Relations, 1973.*

first three industries, foreign firms were dominant. In the later 1960s and early 1970s, the automotive industry attracted a large portion of the foreign capital entering the country.

Given the small share of private foreign investment, the resource pulls resulting from the 1954 Law cannot have been very strong. Even when there has been a significant impact, as with the industries noted above, it can be argued that the foreign trade policies were really the determining factor. As indicated above, the areas of concentrated investment are basically industries producing consumer goods that were previously imported. They came into existence in response to import restrictions imposed on the foreign trade regime. Foreign firms exporting to Turkey at one stage or other found their sales declining as a result of the import restrictions and entered into joint ventures with the importers of their products. Thus, in effect, it was again the import-substitution path to industrialization that was reflected in foreign private investment.

The impact of these import-substitution industries on other activities in Turkey does not appear to have been strong. These industries rely heavily on imported raw materials, as in the rubber and tires and pharmaceuticals industries and of semi-manufactured goods as in the electronic equipment and automotive industries. Thus, while private foreign investment, in response to the 1954 Law and the incentives of the trade regime, led to the establishment of a few new industries in Turkey, its effect on the pattern of output within manufacturing has been rather small.

Incentives for private investment

DPT cannot regulate private-sector activity in the same manner as it does KIT investments. Instead, it has formulated a series of "incentives" and determines which industrial sectors are eligible for each type of incentive.

In the first five-year plan, incentives were applied primarily to discourage investment in non-manufacturing sectors (by taxes), in the hope of diverting investable resources towards manufacturing. Also in that period, the first steps were taken to develop the incentive system that is still in force. The measures taken then included: *(a)* a tax-rebate scheme on investments was adopted that enabled investors to receive a rebate on their corporate or income taxes if they reinvested their earnings; *(b)* a system of accelerated depreciation was introduced; and *(c)* a system of exemptions and postponements of customs duties on capital-goods imports, depending upon the degree of priority assigned to the investment, was inaugurated. The last measure has been extremely important over the years.

During the period of the second five-year plan, the three incentive measures were diversified, and their application became more selective. In 1967, the Law on the Implementation Principles of the Development Plan was passed. It empowered DPT to administer all existing incentives and established a new department in DPT for that purpose. During that period, experts in DPT decided upon the extent to which individual activities would be eligible for individual incentives. In 1969, the Constitutional Court ruled that the granting of different rates of incentives to different applicants was unconstitutional. Since then, the incentives have been

administered on an all-or-none basis: either the individual applicant is granted the specified rate of incentive, or he receives nothing. This ruling has resulted in a system under which the set of incentives can be set forth straightforwardly in the Annual Programmes.

At present, six types of incentives, of varying importance, may be granted. Each Annual Programme contains a General Promotion Table, which lists the six incentives in the column headings and the various subsectors of manufacturing industries in the rows; x's indicate that a particular industry, as shown in the row, is eligible for the incentive in the column heading, except for the column indicating the number of years over which postponed customs duties may be paid.

The tax rebate scheme on investment, the first incentive, was introduced in 1963. In essence, the scheme grants partial exemptions to parties liable for income and corporate taxes up to the amount of their earnings they reinvest in a given year. For industry, the rebate applies only to the investment financed by equity capital. The rebate rates have been changed several times since 1963. At present the rate is 30 per cent, i.e., 30 per cent of the total investment financed by the earnings of a company is excluded from its taxable income. A higher rate, currently 50 per cent, applies for industrial investments made in the disfavoured areas. Investments in machinery, equipment and vehicles as well as building construction (with the exception of dwellings) are eligible for the tax rebate benefits. However, rebates may not be claimed for the purchase of land and spare parts, and there is a minimum size of the investment. For manufacturing, the investment must exceed LT 250,000 (approximately $16,000) unless it is to be made in a disfavoured area, in which case the minimum is LT 125,000.

The second important measure is the exemption from custom duty for investments made in the sectors specified in the General Promotion Table. Even once a sector is so designated, the Ministry of Industry and Technology may, before granting the exemption, ask for an export guarantee and/or require that the company be willing to sell some of its shares to the general public. When this measure was introduced in 1967, it also provided partial customs exemptions for the projects approved by DPT, which enabled DPT to use the custom exemptions selectively, varying the rate from project to project. However, as mentioned, the granting of partial exemptions was found unconstitutional in 1969 and was discontinued so that either zero or total exemption must be granted.

The third promotion measure permits custom duties to be paid in instalments, stretched out for five years, which, of course, is an incentive only when customs exemption does not apply. In each year's Annual Programme, the General Promotion Table indicates the sectors eligible to benefit from this measure and the number of instalments. The measure obviously does not remove all financial obligations of the investor, since he eventually pays the duty and the interest on it. In effect, the measure is a medium-term credit on relatively easy terms, and thus contains a subsidy component.

Allocation of foreign exchange from the investment quotas is used as another incentive. In the late 1960s, when the foreign-exchange situation was tight, this measure was important. However, since 1970, the reserve situation has improved, and foreign-exchange allocation for investments has become more or less automatic. Investors are given foreign exchange for their investments automatically if their project is in an area shown in the General Promotion Table and the item to be imported is not domestically produced.

The last two promotion measures, the provision of medium-term credits at low interest rates and permitting the use of foreign credits, are less important. Firms entitled to receive promotional support are provided with cheap credits, and the investor is permitted to pay subsidized interest rates on medium-term credits. Use of foreign credits, by contrast, is prohibited except when eligibility is indicated on the General Promotion Table. Even then it is required that the investment involve new technology, that the amount of credit not exceed 60 per cent of the total investment, that the repayment not be scheduled for at least two years and the rate of interest not be more than 1 per cent above the rates prevailing in the European markets.

Since 1968, the General Promotion Table has been prepared each year by the Economic Planning Department of DPT. A small unit within this department examines informal suggestions made by entrepreneurs and the Ministry of Industry and Technology and consults with the section chiefs and sector specialists of DPT in giving final form to the tables. The unit distinguishes among investment goods, intermediate goods and consumption goods. All projects in the sector producing investment goods are automatically listed eligible for the incentives. Most of the sectors producing intermediate goods are also given all incentives, but there are exceptions. On the other hand, the incentives provided for the sectors producing consumer goods are applied more selectively. Only sectors producing "important" consumer goods and goods with "special problems" are promoted, such as dairy products.

The administration of the incentives, which is the responsibility of the Ministry of Industry and Technology, appears to be straightforward. The Ministry issues a "certficate of promotion" for which the investor has applied, after screening the project quickly for financial, economic and technical acceptability.

If used selectively, incentives can be powerful instruments in influencing the pattern of investments. However, it is commonly held that the Turksih incentive system has lost much of its selectivity. For one thing, the number of sectors included in the promotion table has grown extensively over the years. Few sectors are not included. Secondly, the measures currently employed do not permit any flexibility in their use. No differentiation is possible in the rate at which a certain measure is applied to a sector or a project.

Given this nature of the promotion measures, it could be argued that the system provides strong incentives for industrial investments in general and in the investment goods industries in particular. This coincides with the overall strategy of Turkish planning.

On the other hand, it should be noted that no thorough examination of the actual costs and effectiveness of the various promotion measures and of the whole system has been undertaken. Research on this topic would undoubtedly contribute to the assessment of the effectiveness of the system and thus lead to an improvement in it.

Influence of trade policies on allocation of resources

As already indicated, the late 1960s were a period during which the Turkish lira was considerably overvalued and balance-of-payments difficulties were regarded as

the chief constraint on growth. After the devaluation of August 1970, however, the foreign-exchange position improved remarkably. Central Bank reserves of gold and foreign exchange, which were $218 million at the end of June 1970, had risen to $2,120 million by December 1973 and remained at about that level during 1974, despite a doubling of the real import flow over that period.

During the 1960s, criteria relating to the foreign-exchange impact of possible investments were dominant in investment decisions. After 1971, those criteria were virtually abandoned. However, in both the 1960s and 1970s, a criterion continuously applied to decisions regarding allocation of import licences has related to the availability of domestic production; import licences have not been granted if domestic producers could supply the commodity. While the rigidity with which this criterion was employed may have been somewhat greater in the 1960s than in the 1970s, the prohibition of imports once domestic production has started has been the single most important factor leading to resource pulls within the industrial sector. By comparison with import prohibitions, the use of the foreign-exchange criterion in the 1960s was less significant.

Investment criteria in the 1960s and 1970s

Had this study been made in the late 1960s, criteria relating to the foreign-exchange implications of alternative industries would have been virtually the sole subject examined. Considerations such as the type of technology, economic size of investment, and other factors so frequently discussed in 1975 would hardly have merited a mention.

The reason for this lies in the fact that, in Turkey, very few investments in industrial capacity can be made without capital-goods imports. Because foreign exchange was scarce in the 1960s, the granting of licences for imports of capital goods was equivalent to approving an investment project. This gave the Government much greater control over private-sector investments than it would have had if foreign-exchange scarcity had not been a major consideration in policy. That control, to be sure, was a negative one: the Government could prevent investments, but it could not necessarily induce the private sector to invest in a particular industry.

The investment criteria used in the 1970s have been employed only occasionally when investment project proposals in particular sectors exceeded plan and Annual Programme targets. Even those uses applied largely to the public-sector investments. In general, the investment criteria of the 1970s seem to have constituted a sort of check-list, which, if answers were satisfactory, constituted a basis for project approval: the presumption was that capital-goods imports, and investment, could proceed unless a finding was negative with respect to one or more criteria. In the late 1960s, lack of foreign exchange limited capital-goods imports, and thus the "foreign-exchange-saving criterion" was the primary concern, and it applied to the private sector to a much greater extent than do the criteria of the 1970s.

To be sure, employment and other consequences of alternative investments were to some extent examined when deciding upon capital-goods import licences. But, if one project required a high flow of imports of raw materials and intermediate goods while another did not, it was very likely that the latter would be approved, without regard to the domestic resources employed in the alternative project. The Government, in addition to its general criteria, imposed specific objectives for

individual industries with a view to saving foreign exchange. The domestic-content requirements of the assembly industries, for example, were continuously increased, and major difficulties were encountered as those industries lagged behind the targets set for them in the Annual Programmes.

The fact that the lira was significantly overvalued, combined with the inability of producers to obtain intermediate goods at internationally competitive prices when they were produced domestically, resulted in a strong bias towards the acceptance of import-substitution projects according to the criteria laid down in the 1960s. While export projects were readily approved under the foreign-exchange savings criterion, few of them were submitted in the industrial sector because they were unprofitable. To counter that, the Government began in the middle 1960s to grant export incentives to various industries. Those incentives were, in theory, rebates for taxes paid by the industries. However, in fact the incentives often exceeded the "true" taxes paid by an amount sufficient to represent a sizeable inducement to manufacture exports.

Indeed, by the late 1960s, nontraditional exports of selected industrial goods were beginning to increase rapidly, although the base from which they began growing was exceptionally small and the absolute amount of such industrial exports was low. Thus, the value of manufactured exports (as classified by USAID) was annually $20-30 million in the period 1963-1968. It rose to $50 million in 1969 and to $94 million in 1970, partly because incentives (which were stated as a percentage of the lira equivalent of foreign-exchange receipts) were not rescinded following the devaluation of 1970. The effective exchange rate for nontraditional exports therefore rose from LT 10.52 in June 1970 to LT 16.50 in August; it was even higher than that for selected industrial commodities.

Criteria for permitting imports

There can be little doubt that use of the foreign-exchange saving as a criterion for allocating foreign exchange to investment projects significantly affected the composition of industrial output during the 1960s. The Government had direct control over investments via its licensing policy for capital goods and used it to ensure the desired outcome.[148] However, it is difficult, if not impossible, to separate the effects of the fairly detailed control from the more general effects of the incentives provided by trade policies both in the 1960s and the 1970s on import substitution.

In both periods, a necessary, but not sufficient, criterion for placing a commodity on the list of eligible imports has been the absence of "adequate" domestic production. When a commodity does not appear on the eligible import list, an import licence cannot be issued, and the good must be obtained from domestic sources. The fact that producers of commodities previously imported will receive automatic protection without regard to the magnitude of that protection provides a powerful stimulus to import-substitution industries.[149]

[148] This is not to imply that all estimates of foreign-exchange saving were accurate; indeed, in general it was less than anticipated, as illustrated by the experience of the assembly industries.

[149] It also constituted a powerful incentive to enter final processing industries, in order to capture the value of the licences for imports of intermediate goods, as occurred in the assembly industries. In effect, importers of television sets, for example, were making very high profits. Those who established a domestic assembly industry were enabled to capture part of those profits since they could obtain import licences for the various parts and components.

To a certain extent, investing in import-substitution industries in a sheltered market is attractive. In Turkey, it is certainly the case, since an unfailing criterion for removing a commodity from the list of eligible imports is the emergence of domestic productive capacity.

The traditional manufacturing industries, such as food processing, textiles and wood products, have been clearly the net losers from the application of this criterion. Because they have been unable to enter export markets, their expansion has been limited by the growth of domestic demand, whatever responsiveness there might be to decreased domestic prices as a result of increases in productivity. With an overvalued exchange rate, the profitability of such expansion has been largely limited to the domestic market when compared with the attraction of starting up production of commodities previously imported. Even the export rebates offset only a small part of the differential in profitability.

In the 1960s, and up to 1975, little, if any, attention was given to costs when the decision was made to prohibit imports. On one or two occasions, the Government, believing that domestic producers were making undue monopoly profits, has threatened to permit imports as a means of putting pressure on those producers to lower, or fail to raise their prices. In very few instances, however, have imports actually been permitted.[150]

Effectiveness of priority selection in Turkey

Two yardsticks can be used to evaluate how effectively industrial priorities have been selected: *(a)* the extent to which the targets are in fact achieved; and *(b)* the degree to which the targets appear to represent economically wise decisions. The way or ways in which the system of setting priorities might be improved should also be examined. These questions are addressed below.

Realization of targets

There is no ideal means of measuring the extent to which a programming and implementation system is effective in achieving its targets. Targets, for example, may be nothing more than forecasts of what will happen anyway. In this case, comparison of planned and actual figures would reveal very little discrepancy (except forecasting error), and yet one could hardly judge programming and implementation to have been effective. At the opposite extreme, one may find planners selecting a set of targets that was extremely difficult to achieve and then selecting instruments that significantly altered the output and investment pattern. Yet one might still observe a notable difference between planned and actual outputs.

[150] To be sure, such competition has occurred anyway, since cross elasticities of demand are significant and importers have devised means to import commodities that can be sold at very high domestic prices. Some ways have been legal, as when foreign workers are permitted to bring back cars and consumer durables despite domestic production and import prohibition under other circumstances. In other instances, as with cigarettes, smuggling has been important.

Despite these difficulties, it is useful to attempt to compare planned and actual outcomes. The results must be interpreted with care and in terms of the underlying economic situation. In the absence of any satisfactory technique for evaluating the effectiveness of programming and implementation, there is little alternative.

Other difficulties arise. In particular, targets are always set in prices prevailing before a plan is carried out; actual figures are always given in different prices. When the price level and relative prices are changing, interpretation of the planned and actual becomes difficult, even when all one wishes to investigate is how close the two are.

Fortunately for present purposes, DPT undertook a comparison of actual investment and the levels anticipated in the Annual Programmes in comparable (current) prices for the period 1963-1970. Table 20 gives the results for the period

TABLE 20. DISTRIBUTION OF FIXED INVESTMENT BY SECTOR, 1965-1970

Sector	*Programmed*			*Actual*			*Ratio actual to programmed (percentage)*
	Private	*Public*	*Total*	*Private*	*Public*	*Total*	
	(a) 1965 (millions of lira)						
1. Food	62	113	175				
2. Beverages	36	25	61	160	128	288	122
3. Tobacco	...	91	91				
4. Textiles and clothing	99	91	191	300	27	327	171
5. Forest products	21	36	57	20	7	27	47
6. Paper	31	116	147	8	12	20	14
7. Printing	26	19	45	40	12	52	115
8. Leather products	5	1	6	8	...	8	133
9. Rubber products	115	...	115	115	...	115	100
10. Plastics	52	...	52	20	...	20	38
11. Chemicals	156	341	497	90	103	193	39
12. Cement					86		
13. Non-metallic mineral products	104	104	208	115	30	231	111
14. Iron and steel	156	182	338	155	184	340	101
15. Metal products	68	30	97	100	24	124	128
16. Machinery	104	33	137	15	3	18	13
17. Agricultural machinery	5	2	7	8	5	13	186
18. Electrical machinery	73	5	78	76	...	76	97
19. Shipbuilding	31	25	56	70	20	90	160
20. Other manufacturing	...	23	23	...	26	26	113
21. Petroleum refining	...			...	...	...	...
Total	1 146	1 238	2 384	1 300	665	1 964	82
	(b) 1966 (millions of lira)						
1. Food	85	87	172	197	97	294	171
2. Beverages	11	22	32	11	17	28	88
3. Tobacco	5	42	46	2	39	41	85
4. Textiles and clothing	212	70	282	407	93	500	177
5. Forest products	69	18	87	34	19	53	61
6. Paper	5	107	112	7	49	56	50
7. Printing	16	15	31	68	14	82	264
8. Leather products	5	4	10	17	1	18	180

Sector	Programmed			Actual			Ratio actual to programmed (percentage)
	Private	*Public*	*Total*	*Private*	*Public*	*Total*	
9. Rubber products	69	...	69	147	...	147	213
10. Plastics	27	...	27	28	...	28	104
11. Chemicals	175	384	559	148	289	437	78
12. Cement 13. Non-metallic mineral products	101	143	244	170	126	344	141
14. Iron and steel	106	129	234	102	123	225	96
15. Metal products	149	2	151	119	8	128	85
16. Machinery	106	23	129	50	22	72	56
17. Agricultural machinery	5	2	7	5	6	11	157
18. Electrical machinery	79	2	81	51	...	51	63
19. Shipbuilding	32	54	86	17	41	58	67
20. Other manufacturing	16	...	16	22	...	22	138
21. Petroleum refining	...	...	...	...	...	...	...
Total	1 270	1 105	2 375	1 600	933	2 593	109
	(c) 1967 (millions of lira)						
1. Food	135	150	285	178	141	319	112
2. Beverages	22	23	45	67	26	93	207
3. Tobacco	5	55	61	5	36	41	67
4. Textiles and clothing	323	69	392	432	73	505	129
5. Forest products	81	43	123	48	11	59	48
6. Paper	11	120	131	18	122	140	107
7. Printing	16	16	32	45	10	55	172
8. Leather products	13	7	20	8	6	14	70
9. Rubber products	134	...	134	87	...	87	65
10. Plastics	32	...	32	42	...	42	131
11. Chemicals	183	560	743	204	469	661	89
12. Cement	162	261	422	159	141	300	127
13. Non-metallic mineral products				157	82	240	
14. Iron and steel	248	140	388	245	99	344	89
15. Metal products	172	11	183	146	...	146	80
16. Machinery	52	44	96	49	43	92	96
17. Agricultural machinery	7	2	8	12	12	24	300
18. Electric machinery	54	2	56	84	...	84	150
19. Shipbuilding	47	81	128	127	33	160	125
20. Other manufacturing	27	8	35	20	8	28	80
21. Petroleum refining	...	...	...	...	...	...	...
Total	1 724	1 592	3 316	2 134	1 300	3 434	104
	(d) 1968 (millions of lira)						
1. Food	152	179	331	188	190	378	114
2. Beverages	21	35	56	73	21	94	170
3. Tobacco	1	31	32	7	29	36	110
4. Textiles and clothing	498	104	601	417	92	509	85
5. Forest products	52	39	91	50	32	82	90
6. Paper	31	271	302	30	277	307	102
7. Printing	31	12	43	39	12	51	120
8. Leather products	16	2	18	10	2	12	65
9. Rubber products	78	...	78	42	...	42	54

TABLE 20 *(continued)*

Sector	Programmed			Actual			Ratio actual to programmed (percentage)
	Private	Public	Total	Private	Public	Total	
(d) 1968 (millions of lira) *(continued)*							
10. Plastics	26	...	26	75	...	75	290
11. Chemicals	394	402	796	330	492	822	103
12. Cement	341	139	479	240	151	392	216
13. Non-metallic mineral products				162	51	212	
14. Iron and steel	415	140	555	350	170	520	94
15. Metal products	189	16	205	154	11	165	80
16. Machinery	183	23	206	68	35	103	50
17. Agricultural machinery	36	7	44	41	3	44	100
18. Electric machinery	99	2	100	86	...	86	86
19. Shipbuilding	124	56	180	129	49	178	99
20. Other manufacturing	52	9	60	10	7	17	29
21. Petroleum refining	75	264	339	100	123	223	66
Total	2 811	1 730	4 541	2 600	1 748	4 348	96
(e) 1969 (millions of lira)							
1. Food	210	169	379	288	134	422	111
2. Beverages	95	39	134	114	28	142	106
3. Tobacco	1	34	35	4	22	26	75
4. Textiles and clothing	483	72	555	505	69	574	104
5. Forest products	65	74	139	46	43	90	65
6. Paper	58	522	572	55	690	745	129
7. Printing	58	7	66	70	8	78	118
8. Leather products	18	4	22	4	2	6	26
9. Rubber products	94	...	94	44	...	44	47
10. Plastics	80	...	80	44	...	44	55
11. Chemicals	839	364	1 203	450	511	961	80
12. Cement	105	107	212	366	107	473	223
13. Non-metallic mineral products	85	13	97	164	27	191	196
14. Iron and steel	298	202	500	342	285	627	126
15. Metal products	159	33	191	82	22	104	54
16. Machinery	145	15	159	155	16	170	107
17. Agricultural machinery	47	4	51	48	2	50	98
18. Electrical machinery	129	8	138	66	7	73	53
19. Shipbuilding	223	75	299	122	42	164	55
20. Other manufacturing	24	7	32	4	9	13	42
21. Petroleum refining	37	325	366	127	341	468	129
Total	3 253	2 073	5 326	3 100	2 363	5 463	103
(f) 1970 (millions of lira)							
1. Food	219	246	465	253	152	405	87
2. Beverages	77	37	114	50	19	69	60
3. Tobacco	2	35	37	5	24	29	78
4. Textiles and clothing	334	69	403	401	92	493	122
5. Forest products	82	74	156	73	28	101	65
6. Paper	106	482	588	140	464	604	103
7. Printing	44	6	50	61	8	69	138

Sector	Programmed			Actual			Ratio actual to programmed (percentage)
	Private	Public	Total	Private	Public	Total	
	(f) 1970 (millions of lira) *(continued)*						
8. Leather products	22	4	26	8	5	13	50
9. Rubber products	60	...	60	34	...	34	57
10. Plastics	66	...	66	74	...	74	112
11. Chemicals	820	505	1 325	467	509	976	74
12. Cement	339	114	453	225	102	327	72
13. Non-metallic mineral products	273	...	273	230	...	230	84
14. Iron and steel	558	677	1 235	591	807	1 398	113
15. Metal products	230	15	245	158	22	180	73
16. Machinery	230	11	241	222	13	235	98
17. Agricultural machinery	82	2	84	34	2	36	43
18. Electric machinery	126	8	133	105	15	120	90
19. Shipbuilding	229	117	347	300	48	348	100
20. Other manufacturing	27	9	36	50	7	57	158
21. Petroleum refining	154	414	568	408	545	953	168
Total	4 080	2 825	6 905	3 889	2 862	6 751	98

Sources: For 1970, *1972 Annual Programme*, p. 39. For years 1965-1969, *1971 Annual Programme*, pp. 57-61.

1965-1970. The first three columns of the table for each year give the planned figures contained in the Annual Programmes,[151] with a breakdown between the private and public sectors. The second three columns give the DPT estimate of the actual figures. The final column gives the percentage that the actual investment represents of the programme investment. To be sure, errors in estimating the capital-output ratio for specific projects may show a wide divergence between investment targets and performance although production targets have been met; that does not appear to have been the case in Turkey.

The fact that the price data are not the same from year to year makes any comparisons over time difficult. None the less, certain trends appear to emerge from inspection of the data. First, total investment in the manufacturing industries has, by and large, been fairly close to the programmed totals. The widest divergence was in 1965, when actual investment was only 82 per cent of planned. In fact, however, the discrepancy is more than explained by the shortfall in investment in the public sector; in that year, private investment exceeded the programmed amount by 13 per cent, while public investment was only 54 per cent of the programmed level. The unusually poor performance of the public sector was attributed to the several large projects programmed for 1965. In addition, both project preparation in Turkey and project financing by the consortium were slow.

[151] It should be noted, of course, that the programmes themselves are altered somewhat from the planned figures in the way indicated above. Comparison of actual with planned figures would reveal somewhat bigger discrepancies; difficulties of adjusting to constant prices preclude any meaningful comparisons.

The data suggest that the KITs came much closer to filling the targets set for them in the late 1960s and indeed began exceeding them. This change reflects both the improved capabilities of the KITs to prepare and implement projects, and also a more realistic appraisal by DPT of the relative investment prospects of the two sectors; the fraction of total industrial investment programmed to the KITs fell in the late 1960s.

When one examines the performance of individual sectors, the extent to which targets were met is, as might be expected, less than for the totals. The divergences do not appear to have resulted from lags in timing: if timing lags were all that led to a divergence between programmed and actual investment, a shortfall one year would generally be followed by overfilling the target the following year.

The textiles and clothing sector, for example, appears to have had investment above the programmed level in all but one year and well above it in 1965 and 1966. The opposite pattern is exhibited by chemicals, metal products, electric machinery, and machinery, where investment fell short of programmed levels in five of the six years.

It is difficult to generalize on the basis of the data in table 20, especially in the absence of comparable data for more recent years. None the less, inspection provides some basis for the notion that, especially early in the period, it was the import-substitution sectors that lagged somewhat behind plan targets while more traditional industries, such as textiles and food products, exceeded them. The tendency in the late 1960s for planned investment to be somewhat closer to actual probably resulted from a combination of factors: *(a)* the Annual Programmes were somewhat modified in the light of earlier experience; *(b)* incentives for investment in the lagging sectors were increased in response to their relatively disappointing performance; and *(c)* the foreign-exchange shortage, which intensified in the late 1960s, gave the Government detailed control over investment when all sectors wanted to invest more than the available foreign-exchange licences would permit. It may be that the greater correspondence between planned and actual investment in the late 1960s simply reflects the greater ease with which the authorities could brake the sectors overachieving targets, since there was excess demand for investment goods in all sectors.

One receives the impression that the Annual Programmes are not really binding and that the behaviour of individual sectors can diverge quite widely from that planned. Consider, for example, investment in cement in 1969, where private-sector investment was LT 366 million, compared with a programme level of LT 105 million, while the chemical industry experienced only LT 450 million of private-sector investment, compared with a programmed LT 839 million. Such contrasts are well beyond the range of error involved in estimating capital-output ratios, and almost certainly reflect real divergences in both investment and output levels between the Annual Programmes and the outcome.

Very little basis exists on which to judge whether conformity between programmed and actual investment is desirable. On the one hand, unexpected circumstances may change what is desired after the Annual Programme has been formulated. Moreover, as indicated above, the planners often take the estimates of private-sector investment more as forecasts than as statements of desired levels of activity.

On the other hand, there can be little doubt that investment has lagged in precisely those sectors where an intensive effort at import substitution has been

made. That was true for chemicals, machinery, and related sectors in the 1960s, and as already recounted, is true for the heavy industries to be developed in the period of the third plan. The question arises as to when precisely those industries into which the Government is trying to pull resources lag behind.

Providing a definitive answer is well beyond the scope of this study (or known methods of economic analysis). However, there is considerable evidence that the development of import-substitution industries cost substantially more than was anticipated. That is the topic to which attention must now turn.

The cost of priorities

The data in table 20 reflect both that resources were pulled into import-substitution industries and that the pulls were not quite as great or as rapid as was anticipated in the Annual Programmes and plans. Government officials perceived a similar phenomenon in the fall of 1975. All reported the failure of heavy-industry investment to proceed at anything like the rate anticipated in the third five-year plan. Additional efforts to start public-enterprise projects were therefore made, and the shortfall in investment behind planned levels implied that any feasible project proposal was accepted.

In that sense the mechanisms by which industrial priorities were and are carried out is the use of an ever-looser standard of project evaluation as the difficulty of achieving targets increases. This is evident in the late 1960s, when all estimates pointed to wide disparities in domestic-foreign price differentials, high ERPs (including the effect of quota restrictions as well as tariffs) and DRCs.

With the easier foreign-exchange situation of the early 1970s, there is some basis for the belief that these wide variations in price differentials and cost had diminished, since it became easier to obtain import licences. To the extent that liberalization occurred, the implicit protection provided to domestic producers declined; and the differential in incentives between exportables and import-substitution production was reduced. This tendency was, of course, offset by the continued prohibition of imports of commodities where domestic productive capacity was available.

To date, however, there is very little evidence available with respect to the cost and price differentials of the early 1970s. TSKB and the World Bank undertook a study in which prices in 1972 were used. The results of that study are presented in table 21, where the effective rates of protection rates for individual commodities and the financial and economic rate of return for projects financed in part with TSKB loans are presented. The study gives the only available data for the post-1970 period on effective protective rates.

Table 21 shows an extremely wide variation in ERP from 11 per cent for metal drums to 1,911 per cent for steel billets. Data underlying the ERP computations are not available, but the situation appears to have changed significantly since the late 1960s. If that is the case, high ERPs result from the domestic production of commodities in which international value added is relatively small, and a sizeable amount of Turkish resources are employed in substituting for the foreign processing.

By and large, it would appear both from the *a priori* evidence of the continued reliance on import prohibitions for domestically produced goods, and from the small amount of empirical data provided by the World Bank-TSKB study that a major shortcoming of Turkish development continues to be heavy emphasis on import substitution.

TABLE 21. ESTIMATES OF ECONOMIC AND FINANCIAL RATES OF RETURN AND EFFECTIVE RATES OF PROTECTION FOR SELECTED INDUSTRIAL PROJECTS

(Percentage)

Industrial projects	*Effective protection*	*Financial rate of return (before corporation tax)*	*Economic rate of return*
Metal drums	- 11	33	12
Transformers	- 2	21	49
Tires	1	12	31
Chemicals	0	41	44
Motor pumps	0	21	10
Canning vegetables	0	27	33
Glass wool	6	7	14
Tomato paste	15	16	22
Wood/formica	24	44	18
Cement	29	19	28
Textiles	40	19	14
Cement	42	30	19
Plumbing supplies	53	20	12
Textiles	96	9	0
Light bulbs	118	63	48
Textiles	153	52	22
Textiles (synthetic)	197	29	9
Metal parts	276	33	12
Steel wire/rods	291	12	Negative
Copper/steel wire	294	36	2
Ceramics	363	100	Negative
Plastics	1 060	26	Negative
Steel billets	1 911	44	Negative
Median	42	26	

Source: International Bank for Reconstruction and Development, *Turkey: Prospects and Problems of an Expanding Economy*. A World Bank country economic report (Baltimore, Johns Hopkins, February 1975).

Conclusions

If one evaluates the selection of industrial priorities according to the extent to which systematic use of the DRC, benefit-cost, or economic-rate-of-return (at shadow prices) criterion is relied upon, then the Turkish decision-making process fails the test. Only TSKB has used the criteria suggested in the literature; other agencies are only now beginning to experiment with alternative calculations. An economic theorist would thus have to conclude, not entirely erroneously, that there are serious shortcomings.

The evidence presented throughout this study and the results of much other research all point to the lack of selectivity among projects and in particular the heavy emphasis on import-substitution industries with little regard to the cost and the extent to which Turkey has any long-run comparative advantage as the major weakness of Turkish industrial development.

Two qualifications must be made, however. The first pertains to the historical development of project selection and application of investment criteria in Turkey. The second relates to the experience of TSKB and the queries of other thoughtful decision makers with regard to the extent to which reliance should be placed on the formal criteria.

Historical development of project selection

The formal criteria suggested by economic theory are not uniformly applied in Turkey. Indeed, some of the data that would be required (especially international prices) are not always included in the project proposals. But therein lies a major point of considerable if not quantifiable significance: project formulation and preparation are an important part of the process of selecting priorities in Turkey.

In the 1950s, the "planlessness" described above led, *inter alia*, to a lack of any co-ordination of review of investments in the public sector. Within the private sector, priorities were largely determined by the profitability (in turn set primarily by the trade and payments regime) of alternative investments and the ability to obtain the necessary capital goods, especially when those goods were available only from abroad. In the early 1960s, with the start of planning, the immediate problem was to gain control of the KIT investments and to impose some measure of rationality upon the system. As already mentioned, delays in project preparation led to considerable slowdowns in the flow of consortium aid. One of the obstacles to more rapid growth was the difficulty of obtaining adequate project proposals. As the 1960s progressed, the capability to prepare project proposals improved and that particular bottle-neck diminished in importance.

A strong case can be made that the very process of preparing projects at all has resulted in projects' being chosen more discriminatingly on economic grounds, despite the absence of precise economic criteria. Since managers must prepare project proposals, even if approval is close to automatic, they must think through their investment plans carefully. In the process of review, technical deficiencies and other factors leading to high costs may come to light. The resulting discussion with experts at DPT and in other agencies may well enable the project to be improved simply by bringing more information to bear on it. In addition, of course, managers know that capital-output ratios and other data will be examined. They have thus some incentive to prepare proposals that are satisfactory from that viewpoint.

Hence it can be argued that projects are being selected and priorities determined ever more judiciously. If precisely defined criteria are not applied, it is because progress is still being made. Over the years, awareness of the importance of project preparation and evaluation has grown, and efficiency criteria have begun to receive consideration. As already seen, in the mid-1970s, almost all groups concerned with project evaluation were beginning to experiment with using alternative criteria for project selection.

While no generalizations are possible based on the experience of one country, Turkish development certainly has been accompanied by improved ability to formulate projects and to prepare proposals. If the next step is to give greater consideration to costs, and especially Turkey's comparative advantage, it may well be concluded that one sign of industrial development is the improved ability to discriminate among alternatives.

Such an argument does not imply that Turkish industrial priorities would inevitably have been determined in exactly the way they have been. For example,

while the use of a precise formula for projects in the 1960s may not have been feasible, at least the cost structure of proposed projects could have been investigated. Indeed, if the argument that the "moral suasion" associated with DPT inspection of various ratios is important, it surely follows that some inquiry should have been made, in the project proposal forms, as to the likely costs and prices of outputs and inputs relative to those prevailing abroad. Even if the information had not been used, it might have alerted all involved to cases where cost disparities between domestic firms and Western European ones were large the, as with other ratios, the reasons for the disparities could have been investigated.

Problems with using economic criteria

If it is correct that improved capability and increased sophistication in project preparation and selection are accompanying Turkish industrial development, the next step must surely be to apply somewhat more formal investment criteria. Signs that this is happening are evident.

Two questions as to the usefulness of investment criteria have arisen, particularly regarding the reliability of project proposals and the sensitivity of the proposals to various assumptions. The real question is the extent to which project proposals are, or can ever be, reliable guides to what will happen.

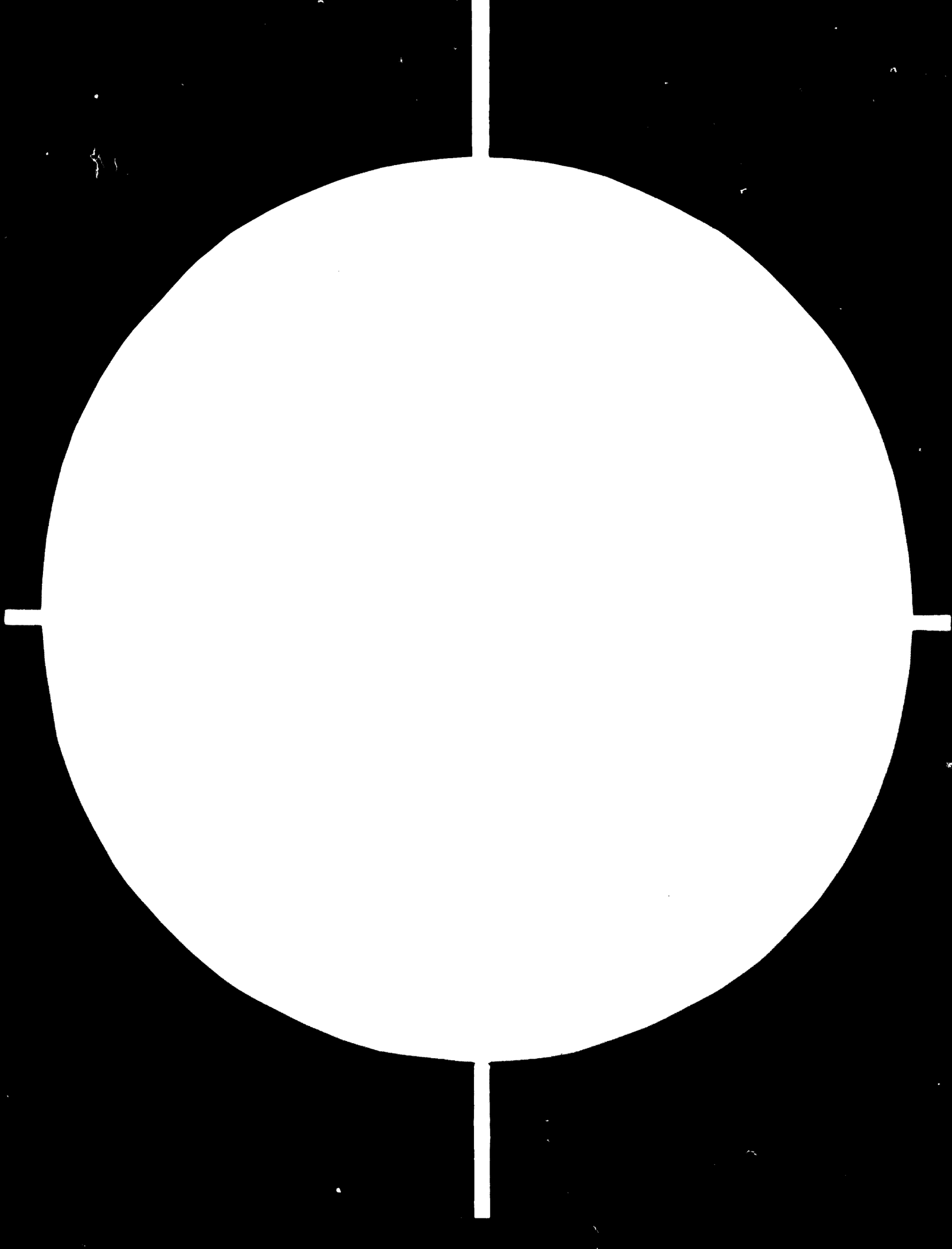
Some individuals are more optimistic than others. Some managers believe their prospects to be highly propitious, expecting rapid construction of their plants, very favourable input prices, and low costs once the plant goes on-stream. Others tend to be more pessimistic (realistic?), anticipating the length of the construction period more precisely and allowing for inevitable increases in costs. Any technique of project selection that does not take this difference in the proposals into account would tend, regardless of the nature of the project, to select those proposed by the most optimistic individuals.[152]

Project proposals, evaluated according to any satisfactory economic criterion, turn out to be extremely sensitive to two things: *(a)* the length of time it takes to complete construction and the rate at which full-capacity utilization is achieved; and *(b)* one's estimate of international prices in the future. With regard to the first, errors in estimating delays in construction and achievement of planned capacity utilization have had serious consequences. In TSKB experience, delays, which are by nature somewhat unpredictable, are the factors most likely to affect the economic profitability of projects. Thus long gestation periods and difficulties in reaching full-capacity utilization may be as important as performance at full capacity. The use of international prices also presents difficulties. Those prices are uncertain; input prices (and capital costs) cannot be known until negotiations take place, and output prices are subject to fluctuations; fertilizer plants that looked very high-cost in 1971, so the argument goes, looked economic in 1974.

Although these difficulties in applying economic criteria are real, they should not be used as an excuse for failing to employ the criteria at all. If the possible outcomes are normally distributed (either with regard to future international prices or with regard to capacity-utilization rates and gestation lags), it would still pay to

[152] This concern is not quite the same as another that might be voiced: if projects are evaluated according to a certain criterion, and managers know it, they will have an incentive to provide estimates that meet that criterion.

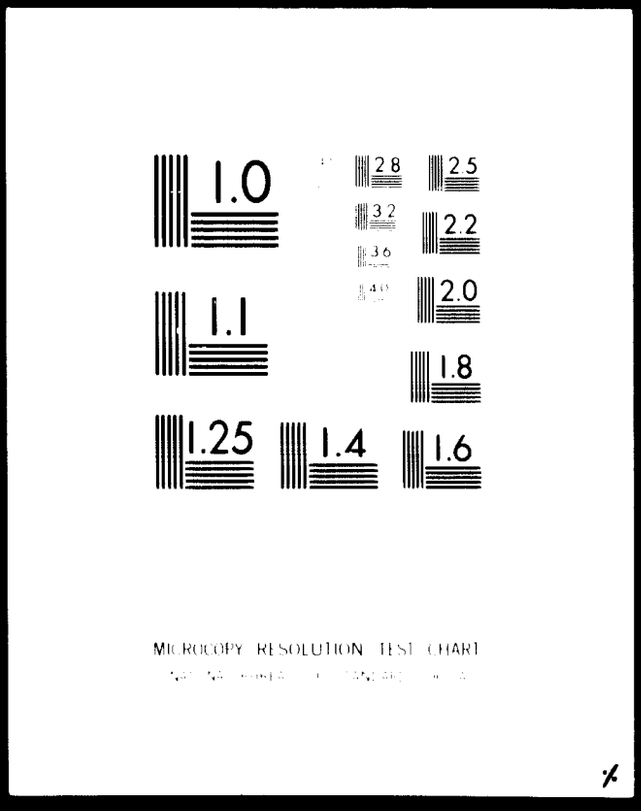
C-623



3 OF 3

09162 -

09167



24 x

D

use economic criteria for selecting projects. If biases can be identified, so much the better. However, as long as decisions must be made on various projects, it can be argued that some basis for making them is used, either implicitly or explicitly. Also, arguments pertaining to uncertainty of international prices are probably overdone. It has been maintained that the cement plants constructed in Turkey in the 1950s were high-cost then but economic by the 1970s. The difficulty with that argument, of course, is that it might have been preferable to have the investments in other sectors in the 1950s and to invest in the cement plants at a later date; the fact that it is economic to invest in something in the 1970s does not prove it was economic in an earlier period.

Other types of difficulty may arise. Suppose that a particular export project is evaluated and found economic using the prevailing f.o.b. border price as the shadow price for output. Actual revenue to the producer per unit of export is less than the shadow price, however, owing to an export tax high enough to make the project commercially unprofitable. In this case, where trade policy conflicts with social benefit-cost analysis, the project is not likely to be implemented. Even if the project appears from the evaluation to be commercially, as well as socially, profitable, however, it may happen that planners in another country are simultaneously examining a similar but lower-cost project that, if implemented, would undersell the Turkish firm in export markets. Such a possibility raises, of course, the problem of imperfect information, which confronts any investor in any market economy, national or international. On the other hand, conflicts between project evaluation and trade (and other) policies can, at least in principle, be resolved by reforming policies to reflect shadow prices: one cannot ask that project criteria be the only instrument to achieve all targets.

In any event, these questions are relevant primarily where projects involving exports are proposed. In fact, few investments have been made in Turkey where exports have been projected as a significant fraction of output. Unless the import-substitution orientation of the Turkish economy were substantially diminished, this class of issues would have little relevance in the Turkish context. Even when it did, there are devices (such as sales contracts with overseas buyers) that enable hedging against a great deal of uncertainty and, as with the other kinds of issues mentioned above, consideration of export potential is an additional factor that can temper mechanical application of investment criteria, but does not indicate that use of the criteria should be completely forsworn.

All these considerations—and others—suggest the need for research on a number of related issues, but especially on the reliability of project proposals as predictors of outcome. It would be useful to compare the reliability and ranking of the original proposals with the ranking based on actual performance. If rankings were approximately the same, the study would provide some assurance that the uncertainties noted above probably are not systematically related to any other variables. If, however, rankings differed significantly, the reasons for the differences could be examined and results used as a corrective in future project evaluation.

The TSKB study results reported in table 21 are of interest in this context in that TSKB officials are not satisfied that the computations of financial and economic rates of return are accurate: *(a)* in some cases, there may be significant errors in arithmetic in the computations and inconsistencies in the numbers; and *(b)* in some instances, an early year of a particular project was chosen, or a year for which there was abnormal difficulty in the firm's operations.

The interpretation of the data in table 21 is also open to question: surely, if there is uncertainty, some projects are bound to perform poorly, and the fact that not all TSKB-funded projects have the same rate of return is not *per se* evidence of poor performance or unwise project selection. Moreover, since TSKB began using economic criteria only in 1968, a more meaningful test would have been to compare the economic rates of return on post-1968 projects with the rates of return of other investors where economic criteria were not employed.[153] Another test that might be employed would be to take projects actually approved without the use of economic criteria and to examine the way those would have ranked had the usual criteria been used. Such a ranking could then be compared with the performance of those projects. Such comparisons are tremendously difficult, especially as it would be desirable to evaluate, at least to some extent, "foreseeable" differences between plans and realizations and "exogenous" changes in conditions.

The issues raised in this study do not suggest that prevailing criteria for evaluating projects are unsatisfactory and should not be employed failing outcome of further research. They do, however, point to ways in which, once more systematic use is made of investment criteria, further research can improve the usefulness of those tools.

Bibliography

Fry, Maxwell. Finance and development planning in Turkey. Leiden, the Netherlands, Brill, 1972.

Herschlag, Z. Y. Turkey the challenge to growth. Leiden, the Netherlands, Brill, 1968.

International Bank for Reconstruction and Development. Turkey: prospects and problems of an expanding economy. A World Bank country economic report. Baltimore, Johns Hopkins, 1975.

Krueger, A. O. Foreign trade regimes and economic development: Turkey. New York, Columbia University Press, 1974.

_____ Rates of return to Turkish higher education. *Journal of human resources* (Madison, Wisconsin), fall 1972.

[153] At first glance, one might think it would be useful to compare the performance of post-1968 investments with those for prior years. However, anything else in the Turkish economy that influenced comparative behaviour of firms would also be picked up by such a test.

Printed in Austria

Price: $US 7.00
(or equivalent in other currencies)

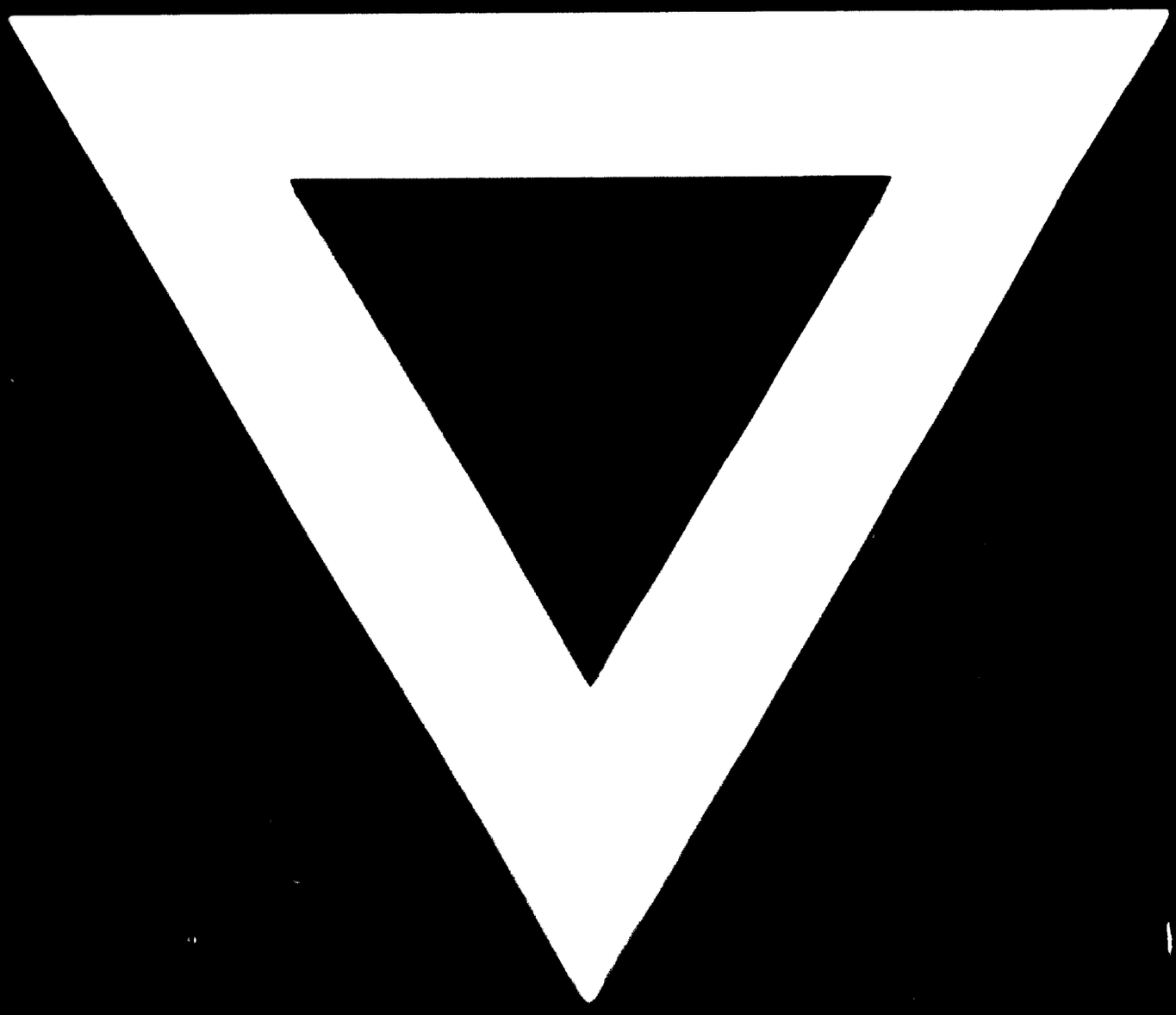
United Nations publication

78-375—May 1979—4,300

Sales No.: E.78.II.B.12

ID/217

C-623



81.10.20