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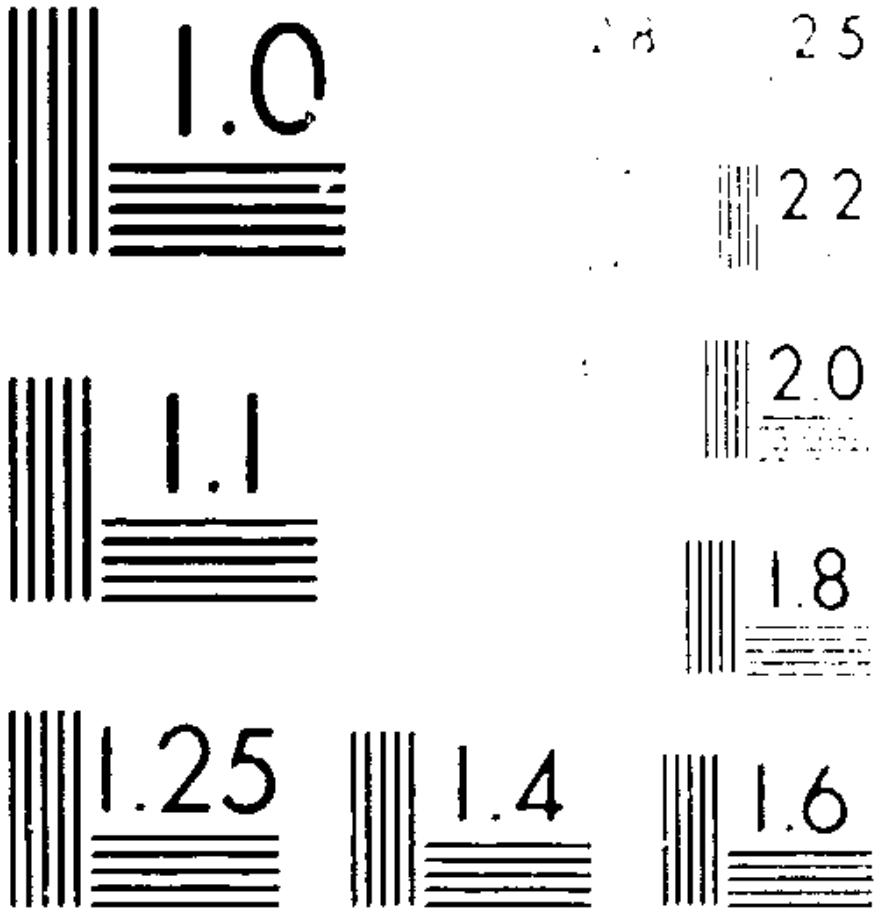
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STRUCTURAL IMBALANCES IN DEVELOPED COUNTRIES: THEIR IMPLICATIONS FOR INDUSTRIAL DEVELOPMENT AND RESTRUCTURING*

Prepared by the
Global and Conceptual Studies Branch
Division for Industrial Studies

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Foreword

In the framework of the research programme on industrial redeployment and restructuring, a seminar was held in Vienna on Structural Imbalances in Developed Countries: Their Implications for Industrial Redeployment and Restructuring on 2 October 1980. This paper was prepared in connexion with the seminar. It was prepared by Dr. R.G. Gregory of the Industries Assistance Commission, Canberra, Australia, as a UNIDO consultant.

Some comments by Professor Assar Lindbeck of the University of Stockholm are included at the end of the paper.

Introduction

The price of oil has risen by 130 per cent since the end of 1978 and increased the net oil import bill in the OECD[1/], for example, by about 2 per cent of GNP. It has been estimated that by the end of 1981 the recent oil price increase will reduce real GNP in OECD countries by about 5 per cent compared with what it otherwise might have been. In this paper some of the economic implications that arise from this large change of oil prices are discussed. Special emphasis is placed on the implications of the oil price increase for industrial redeployment and restructuring.

Most of the analysis will focus initially on the UK and Australia which are economies that are almost self-sufficient in oil. For developed countries, which need to import all their oil requirements the mirror image of the analysis can be applied. Some observations on the implications of the analysis for the trading relationships between developed and developing countries are also offered.

The paper is structured as follows. In part I, we present a particular way of viewing structural change which became common in Australia during the mid-seventies. This analysis, which is concerned with the links between a rapidly expanding mineral export sector and the rest of the economy is well suited to analyse some of the implications of the recent oil price increases. Part II summarizes a recent debate in the UK that began in response to the recent large increase in production of North Sea oil. This debate parallels closely the analysis that was applied to Australia in the mid-seventies. In Part III, the Australian economic experience since the mid-seventies is used to support judgements as to the likely future course of structural change in the UK economy. In Part IV the arguments are brought together and their implications for industrial redeployment and restructuring are developed.

1/ Economic Outlook OECD, July, 1980

PART I: THE AUSTRALIAN EXPERIENCE OF STRUCTURAL CHANGE

Until recently the main interest in structural change in Australia revolved around the interrelationships between an agricultural export sector and an import competing manufacturing sector. The manufacturing sector has always been protected by tariffs and in 1970 the average nominal tariff was about 26 per cent. The agricultural export sector was well aware that an import tariff is equivalent to an export tax and consequently there has been conflict between these sectors. The lobby groups representing agricultural exporters have traditionally argued for tariff reductions and the lobby groups for producers of import competing manufactured goods have argued for tariff increases.

Throughout the fifties and sixties protection policy in Australia was such that, in general, any manufacturer who wanted protection against imports could obtain it.[1/] The agricultural import sector was not particularly successful at bringing about tariff reductions. Towards the end of the sixties and during the early years of the seventies, however, protection policy in Australia changed and tariff increases were more difficult to obtain and in a number of instances individual tariffs were reduced. Then suddenly in an environment of large overseas reserves and high inflation rates the Australian government reduced all tariffs by 25 per cent in July, 1973.

Confusion and anger was genarated in the manufacturing sector by this change. The manufacturing sector had not been subject to significant tariff reductions since the 1959-60 period when import quotas were liberalised. To many in the manufacturing sector, a 25 per cent across-the-board tariff reduction seemed a large reduction indeed. The agricultural sector welcomed the tariff reduction but was not quite sure as to its impact.

Within twelve months of the tariff reduction imports increased considerably. Imports of Footwear, Clothing and Textiles increased by almost 400 per cent. In other sectors, such as motor vehicles imports increased by about 200 per cent. These sectors had been protected by high tariffs and given the Australian tradition of supporting manufacturing industry by tariffs it was natural for those associated with these sectors

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1/ See the criticisms of protection policy in Report of the Committee of Economic Enquiry (Vernon Report), Vol.1, Canberra, 1965.

to argue that the 25 per cent tariff reduction was the source of their inability to compete with imports. It was argued that manufacturing could return to its previous position vis-à-vis imports if the tariff reduction was reversed.[1/]

The 1973-74 period in Australia was a period of turmoil and the question was naturally raised as to the importance of the across-the-board tariff reduction relative to other events that were occuring in the economy. Of course, the general discussion in the community was based towards attributing too much of the increased import flow to the tariff reduction because so many of the participants in the discussion understood the process of tariff making and were seeking to have the tariff reduction reversed.

After a while, however, it became increasingly evident that the exchange rate appreciations that were occurring at this time were far more important than the tariff reduction and that the exchange rate seemed to be related to the rapid growth of a new mineral sector. There were two important aspects of the new mineral sector.

The first was that Australia had become almost self-sufficient in oil as a result of oil discoveries in the Bass Straight region during the mid-sixties. These discoveries led to a significant reduction in the import bill for oil which was to become increasingly significant as oil prices increased during the seventies. The second aspect was that Australia had discovered a range of mineral deposits during the sixties which were also to become increasingly valuable as the oil price increased. These minerals were easily exported.

The extent of mineral developments is illustrated, in part, by Table 1 which presents data as to the physical value of production of the more important minerals. Between 1966 and 1978, coal production increased from 56 mill. tonnes to 109 mill. tonnes. The increase in the production of crude oil, natural gas, iron ore and bauxite was even greater in proportional terms. If the data of Table I were corrected for the price changes

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1/ A detailed analysis of the 25 per cent across-the-board-tariff reduction and its effects on import flows can be found in R.G. Gregory and L.D. Martin, "An Analysis of Relationships between Import Flows to Australia and Recent Exchange Rate and Tariff Changes", Economic Record, Vol.52, No.137, March 1976, p.1-25.

TABLE 1: Volume of Mineral Output: AUSTRALIA

Physical quantities and index (1969 = 100) at constant prices

Year	Coal (m.t.)	Crude Oil (m.c.m.)	Natural Gas (b.c.m.)	Iron Ore (m.t.)	Bauxite (m.t.)
1966	56.0	.05	-	11.1	1.8
1970	72.5	4.9	0.7	45.1	8.3
1974	85.7	23.1	4.4	91.5	18.5
1978	109.4	25.3	7.0	90.3	24.8
	(33.3)*	(7.9)	(1.8)	(17.9)	(n.a.)

m.t. = million tonnes

n.c.m. = million cubic metres

b.c.m. = billion cubic metres

* Share of total mineral output 1977 values.

SOURCE: OECD Economic Surveys, Australia 1980, Table 9.

of minerals relative to other products then the increases in mineral production would be more spectacular.

The Australian economy therefore was being changed by a new export sector which was growing rapidly and exerting pressure on the traditional export and import competing sectors. This pressure was being effected through a rapidly appreciating exchange rate which made the old export sector and import competing sector increasingly uncompetitive. Between 1971/2 and 1973/4 the trade weighted effective exchange rate appreciated by about 15 per cent and the effective exchange rate corrected for inflation in Australia and abroad appreciated by about 20 per cent (Table 2).

The new export sector, through its effect on the exchange rate, was affecting the import competing sector in much the same way as on-the-board-tariff reduction. The import competing sector found that imports were becoming cheaper just as they would have been if there had been further tariff reductions.

The new export sector, through its effect on the exchange rate, was affecting the old export sector in much the same way as a tariff increase would have done. The old export sector found that its ability to compete in overseas markets was being reduced.

Finally, the rapid growth of the new export sector contained within it the forces which would slow its development. As the export sector grew quickly new ventures began to look less promising at the new relative prices brought about by the exchange rate appreciations. The exchange rate appreciations therefore were affecting all sectors involved in international trade as the economy adjusted to the new resource endowments. Of course, the 25 per cent across-the-board-tariff reduction increased the adjustment to be borne by the import competing manufacturing sector and because of the increased imports flowing from the tariff reduction the potential exchange rate appreciations were reduced as was the need for the export sectors to adjust.

Given the Australian environment it was natural to compare the structural change generated by the rapid growth of the mineral sector with the structural change generated by the 25 per cent across-the-board-tariff

TABLE 2: Exchange Rates: AUSTRALIA; June 1969 - June 1979.
(June 1969 = 100)

ITEM	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Effective Exchange Rate 1/	100	100	100	98	109	116	105	105	92	87	83
Real Effective Exchange Rate 2/	100	98	98	97	100	119	112	116	105	99	93

1/ Trade Weighted Exchange Rates

2/ Trade Weighted Exchange Rates adjusted for Changes in Consumer Price Levels in Australia and the OECD.

SOURCE: J.S. Marsden and G. Hollander, "The Effect of Internal Cost and Exchange Rate Changes on the Competitiveness of Australian Industry".
Discussion Paper: Centre for Economic Policy Research. Australian National University. Sept. 1980.

reduction. The answer derived from that comparison was that the rapid growth of mineral exports was far more important than the tariff reduction.[1/]

For the manufacturing sector larger proportion of the increased imports could be explained by the growth of the new mineral sector, leading to an appreciated exchange rate, than could be explained by the 25 per cent tariff reduction. The difficulties experienced by the manufacturing sector therefore were closely related to the economic development of another sector in the Australian economy. For the agricultural sector a similar conclusion was reached. The advantageous effects of the 25 per cent tariff reduction were not sufficient to offset the disadvantageous effects of the mineral exports.

The argument that mineral exports were a major force for structural change became accepted very quickly in Australia and was consistent to data available at that time. The arguments have been reflected in the OECD Economic Survey of the Australian Economy, 1980, a speech by the Secretary of the Treasury and numerous academic articles. The linking of mineral exports to structural change has become known as the "Gregory thesis".[2/]

The data from Table 3 presents the mineral sector in the context of the Australian economy and can be used to illustrate some of the above points. Consider first the pattern of exports. Before the mineral discoveries, Australia was primarily an exporter of agricultural products. During the 1950's more than 80 per cent of exports originated in this sector. During the 1960's, manufacturing exports began to grow, but it is very noticeable that in the late 60's the mining sector begins to force a wedge between agricultural and manufacturing exports. Indeed, the degree to which the growth of manufacturing exports was reduced by the mineral sector is even greater than that indicated in Table 3, because most of the basic processing of minerals finds its way into the statistics of manufactured exports.

1/ The original statement of these ideas in the Australian context can be found in R.G. Gregory, "Some Implications of the Growth of the Mining Sector", Australian Journal of Agricultural Economics, 20, (August 1976), p.71-91.

2/ For a bibliography and survey of the literature see P.J. Lloyd, Protection Policy, in Surveys of Australian Economics, Vol.I., ed F.H. Gruen.

TABLE 3: Contribution of Major Sectors to GDP and to Exports: AUSTRALIA

Year	Gross domestic product a	Contribution to GDP by				Total Exports b	Contribution to exports by		
		Agriculture, fishing, forestry	Mining	Manufacturing	Tertiary		Agriculture, fishing, forestry	Mining	Manufacturing and other
	$m	%	%	%	%	$m	%	%	%
Average of 3 years ending									
1953-54	7 502	19	2	27	52	1 567	84	7	9
1964-64	14 610	13	2	27	58	2 311	79	7	14
1966-67	18 820	11	2	27	60	2 701	72	11	17
1969-70	2. 591	9	2	26	63	3 382	59	20	21
1971-72	33 835	7	4	24	65	4 719	52	25	23
1972-73	38 486	8	4	23	65	5 961	57	22	21
1973-74	45 967	9	4	23	64	6 706	54	24	22
1974-75	55 088	7	4	22	67	8 457	48	28	24
1975-76	64 127	6	4	21	69	9 340	47	31	22
1976-77	73 350	6	4	21	69	11 376	47	31	22
1977-78p	80 150	5	4	21	70	11 901	46	31	23
1978-79p	89 068	7	na	na	na	13 874	na	na	na

a At factor cost
b Total Australian produce excluding gold
p Subject to revision
na Not available

SOURCES: Australian Bureau of Statistics,
Bureau of Agricultural Economics and Department of Trade and Resources

It is also evident from Table 3 that although the mineral sector is very important, with respect to the balance of payments, it is a relatively minor sector in terms of GDP and employs few resources. It is even a smaller employer of labour.[1/] In 1979 employment in the mineral sector was less than 2 per cent of total employment in the Australian economy.

Throughout the period of the rapid growth of mineral exports, the manufacuring share of GDP declined. The manufacturing share of GDP fell from 27 per cent of GDP in 1966-67, to 21 per cent in 1977-78. As the growth rate of the economy tended to slow during the 70's, particularly after 1974/75 this relative decline translated itself into an absolute decline during some years. This is particularly important in a country with a tradition of giving assistance to industries when they are experiencing difficulties. The pressure from a new export sector creates special problems as the older sectors increase the intensities of requests for government assistance. The economic effects emenating from the new export sector lead to increased requests for tariff increases and import quotas for the manufacturing sector, and increased subsidies for the agricultural sector.

If the government responds by increasing tariffs and introducing import quotas to protect the manufacturing sector from the structural changes that are being created by the new export sector, then the adjustment process being forced on the economy by the mineral sector is diverted from the manufacturing sector itself. If the average tariff increases it acts as increased export tax on all exports. Likewise, if the agricultural sector succeeds in increasing their subsidies they divert the adjustment process back to the other sectors. Finally, if the government is successful at putting both of the old sectors back to where they were before the mineral developments then all the adjustment will fall back on the mineral sector which will gradually wither away. Under these circumstances the mineral sector will bear all the increased export tax aspects of the subsidies and tariffs.

1/ There was another aspect to the structural change debate which emphasized that the mineral sector was capital intensive but the manufacturing sector was labour intensive. Under these circumstances, there was concern that structural unemployment would increase. Every time mineral exports led indirectly to imports of footwear, clothing and textiles there would be clearly a net loss of jobs, *ceteris paribus*. The substitution of mineral exports for agricultural exports was much more concerned with rents and land prices, rather than employment.

There is conflict between the three sectors: a conflict which is not immediately obvious to the parties concerned. When textile workers ask for protection against foreign textile producers, they do not turn inwards and argue that to a large degree their problems are being generated by another sector within the economy. The agricultural sector, on the other hand, has traditonally turned inward, but its attention has been directed towards the costs imposed on it by the tariffs which protect the manufacturing sector rather than the adjustment problems created for it by the new mineral sector.

The rapid development of a new export sector, therefore, provided an opportunity to retell the messages of international trade theory in a new way. To a large degree, this opportunity was seized and there is some evidence of success. For example, to an increasing degree government reports concerned with import quotas, tariffs and the manufacturing sector are tending to concentrate more on a comparison of one Australian industry with another rather than a comparison of Australian textile producers with foreign textile producers.[1/] These reports increasingly emphasize where our changing comparative advantage now lies. Thus, they argue that Australia needs new mineral developments and therefore it is essential that imports quotas do not become too wide spread and act as a significant export tax. The protection debate therefore has become internalized and is seen increasingly as a conflict between sectors within the economy rather than a conflict between local industries and foreign supplies.

1/ See, for example, J.O. Stone, Australian in Competitive World - Some Options, Paper presented to 21st General Management Conference of the Australian Institute of Management, November 1979. Stone is currently Secretary to the Treasury.

PART II· STRUCTURAL CHANGE IN THE UK AND NORTH SEA OIL

Directing attention to the situation of the United Kingdom in 1980, reference is made to a paper by P.J. Forsyth and J.A. Kay[1/] in which the following arguments are developed.

First, prior to 1975, the UK imported all of its oil requirements. By 1980 the UK has become self-sufficient in oil and, at the same time, the real price of oil has risen dramatically. Oil imports, therefore, have been taken out of the UK balance of payments at exactly the same time that oil imports would have become increasingly expensive. The result is that the UK balance of payments has changed in a fundamental way. Now, there is no longer the prospect of the very large balance of payments deficit that would have occurred if the UK had not become self-sufficient in oil.

Second, the oil reserves discovered in the North Sea bring increased wealth to the UK which will increase the standard of living. To bring about this increased standard of living the residents of the UK will desire to spend more on goods and services that are traded internationally and more on goods and services that are not traded internationally. The former can be imported but the latter must be produced within the UK economy. Thus, there is a need to redirect resources from the manufacturing sector which produces goods that can be traded internationally to the service sectors, which produces goods that cannot be traded internationally. Unless this transfer of production occurs the increase in real living standard cannot be realized.[2/]

1/ Forsyth and Kay. North Sea Oil and British Structural Change, Institute for Fiscal Studies, Working Paper No. 10, 1980.

2/ "The essentials of what is happening are very simple. North Sea oil adds considerably to the growth of the UK economy. However, this growth takes a highly unbalanced form; all of it occurs in a single sector whose size is, even then, small in relation to the overall economy. To use the additional resources which it makes available to us, it is necessary to convert them to a form in which they can be exploited domestically. But there is simply no way in which oil can be converted into houses, or restaurant meals, or retail and distribution services, either directly or through trade: and it is largely on items of these kinds that we shall want to spend our increased income. All we can do is to exchange oil for traded goods - predominantly manufactures - and redeploy the resources released from these sectors into the other, non-tradable sectors of the economy. There is no mechanism for deriving benefit from North Sea oil which does not, sooner or later, require this structural change". Forsyth and Kay, op.cit.,

Third, the changing structure of the UK economy is to be effected by an appreciation of the real exchange rate which occurs because there is no longer a need to import oil. This appreciation will encourage the imports of manufacturing goods and discourage the export of manufactured goods. In this way the incipient balance of payments surplus that would have occurred now that there is no longer the need to import oil is removed. The process of restructuring that brings about the increased income that oil generates involves a loss of competitiveness of UK manufacturing industry during the transition period.[1/]

Fourth, the structural change away from UK manufacturing industry towards the service sector can be expected to be accompanied by increasing requests by the manufacturing sector for assistance and protection against imports from developed and developing countries, alike. Forsyth and Kay argue, as was argued earlier in the Australian context, that the adjustment of the manufacturing sector must not be stopped by the introduction of subsidies and import quotas. To do so would reduce the real income gain that North Sea oil would otherwise bring to the UK economy.

Some illustrative calculations by Forsyth and Kay are given in Table 4. Column 1 lists their estimate of the pre-oil structure of the UK economy at 1980 prices. Column 2 lists their estimate of the structure of the post-oil economy. It is estimated that oil has added 5.5 per cent to the value of production in aggregate and this higher level of income increases the value of production in all sectors except the manufacturing sector, where the value of production falls by 5.7 per cent. It is this fall in manufacturing sector production that has generated a great deal of interest.[2/]

1/ It has been estimated by the OECD that UK manufacturing has suffered a loss of external competitiveness of between 33 and 45 per cent in the four years to mid-1980. Manufacturing production in the UK is still 5 per cent below the 1973 peak. It is also estimated that the "net capital stock in manufacturing is expected to decline in 1981, for the first time for nearly forty years". OECD, Economic Outlook, Vol. 27, July 1980, p.95.

2/ These data are meant to be illustrative of the effects suggested by Forsyth and Kay. It is unlikely that they represent a detailed forecast on their part.

TABLE 4: Impact of Oil on the UK Economy

Production Changes by Sector (Lbn, 1980 prices)

	Pre-oil	Post-oil	% Change
Primary production	9.0	19.0	+111.1
Manufacturing	48.9	46.1	- 5.7
Construction and housing	22.5	23.7	+ 5.5
Distribution and services	88.1	88.9	+ 0.9
Public administration	13.5	14.2	+ 5.5
Total	181.9	191.9	+ 5.5

SOURCE: Forsyth and Kay, op.cit.

Fifth, the real exchange rate appreciation of sterling and the consequent reduced supply of manufactured exports generates a terms of trade advantage to the UK. An estimate of the actual terms of trade advantage that has occurred to date is given in Table 5. By January 1980 the terms of trade have improved 14 per cent relative to the typical values of the early 1970s. They suggest that perhaps half of the income gains from North Sea oil originates from this improvement in the terms of trade.

The Forsyth and Kay argument has attracted considerable attention in the UK. It is an important argument. If they are right the monetary and fiscal policy of the UK government is less responsible for the current plight of UK manufacturing than might otherwise be thought.

To this point, we have discussed Australia and the UK which are self-sufficient in oil and of course the argument can be applied to other countries which are oil self-sufficient. The argument presented, however, is quite general and it can be developed for countries which need to import their oil. For these countries the increased price of oil will lead to balance of payments deficits, real exchange rate

TABLE 5: UK Terms of Trade in Manufactures

Year	Export Prices (L) (1970 = 100)	Import Prices (L) (1970 = 100)	Terms of Trade (1976 = 100)
1970	100	100	97
1971	110	107	100
1972	118	112	102
1973	128	127	98
1974	153	147	101
1975	194	184	102
1976	238	232	100
1977	287	265	105
1978	315	289	106
1979	340	296	112
1980	358	306	114

SOURCE: Monthly Digest of Statistics
1970-6, machinery and transport equipment series
1976 -, finished manufactures series
Terms of trade = ratio of export prices to import prices.
Forsyth and Kay, op.cit.

de-valuations and to the extent to which they import and export manufactured goods they will need to export more manufactured goods and import less. Consequently, countries such as Australia and the United Kingdom will be required not only to take more imports of manufactured goods as a part of their adjustment to their oil endowments but also they will need to take more imports to finance the imports of oil for those countries which are not self-sufficient. In this way the oil-sufficient and oil-importing countries are linked. One group, the oil-sufficient, might be expected to experience real exchange rate appreciations and a reduced ability to compete internationally relative to their position before the oil price increases and the other, the oil importing countries, might be expected to find that their competitiveness has improved.

These arguments suggest that the pressure for industrial redeployment and restructuring may increase in response to the oil price increases. When this acceleration of structural change is imposed on the reduced rate of output growth in the developed economies it appears inevitable that there will be a growth of protectionism. The structural change affects countries with and without oil-sufficience and in many ways the oil self-sufficient countries may be the key. It is these countries which must accept higher import shares in their markets and lower prospects for a high rate of growth of their exports relative to countries which are not self-sufficient in oil.

Whether these changes are likely to occur is discussed in the next two sections.

PART III: THE AUSTRALIAN EXPERIENCE SINCE 1973/74

The analysis offered by Forsyth and Kay for the UK economy in 1980 is very similar to that developed for the Australian economy in 1973/74. The recent UK experiences came to Australia earlier; the rapid development of a new mineral sector, very large appreciation of the real exchange rate, and the improvement in the balance of payments. What has happened to the Australian economy since 1974? To what degree can that experience throw light on the debate that is occurring in the UK and on the possible future course of the UK economy. To what extent does the model described above which deliberately excludes from the analysis many of the changes that are occurring in the economy, approximate the historical experience.

First, those predictions of the analysis that refer to quantity adjustments and sector shares have remained consistent with the Australian data. The share of agricultural exports in the total have continued to fall as the share of mineral exports have increased (Table 3). The manufacturing sector has continued to decline relative to other sectors (Table 3). The import competing industries that experienced so much difficulty during the period 1972/75 have continued to experience difficulty.

Second, the prediction that the pressure for government assistance will increase also appears to have been borne out. Import quotas were introduced during the 1974-75 period to protect a number of industries and they have not been subsequently liberalised. The changing comparative advantage of individual industries is summarised in Table 6, which presents the average effective rate of tariff protection for twelve two-digit manufacturing industries. For Textiles, Clothing and Footwear and the Transport Equipment industry import quotas were introduced during 1974/75 to prevent the market shares of imports from increasing further. These import quotas, which were originally seen as temporary measures, have remained stable in terms of the market share of imports allowed into Australia. The effective tariff rate equivalent of the import quotas, however, has increased on average. The numbers in brackets in Table 6 refer to the effective tariff rate equivalent of the import quotas. Thus, for the Textile industry the average effective tariff rate increased from 35 per cent in 1973/74 to 57 per cent in 1977/78. All the increase , 21 percentage points, is due to the effect of import quotas. For Clothing and

TABLE 6: Average Effective Rates of Assistance to Australian Manufacturing Sub-sectors, 1968-69 to 1977-78

(per cent)

	1968-69	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
Food, beverages & tobacco	16	17	18	19	19	18	21	20	16	13
Textiles	43	42	42	45	45	35	39(4)	50(15)	51(14)	57(21)
Clothing & footwear	97	94	91	86	88	64	87(14)	99(30)	141(69)	149(67)
Wood, wood products & furniture	26	27	26	23	23	16	18	19	18	16
Paper & paper products, printing	52	50	50	52	51	38	31	30	30	29
Chemical, petroleum & coal products	31	31	31	32	32	25	23	23	21	19
Non-metallic mineral products	15	15	15	14	14	11	11	10	7	9
Basic metal products	31	30	28	29	29	22	16	16	14	14
Fabricated metal products	61	60	60	58	56	44	39	38	34	32
Transport equipment	50	50	51	50	51	39	45(6)	59(15)	54(7)	61(12)
Motor vehicles	52			51		41	77(9)	116(21)	104(9)	124(17)
Other machinery & equipment	43	43	43	44	39	29	24(1)	25(2)	22(2)	21(1)
Miscellaneous manufacturing	34	35	35	32	31	24	27	26	24(1)	25(1)
TOTAL MANUFACTURING	36	36	36	35	35	27	27(1)	28(2)	27(3)	27(3)

Notes:

1. The forms of assistance covered by this table include tariffs, quantitative restrictions on imports, production subsidies, and special pricing schemes for sugar and petroleum products. Forms of assistance not taken into account include government purchasing practices, the local content scheme for motor vehicles and assistance from State Governments. For years up to 1973-74, the pattern of production in 1971-72 was used to obtain estimates, while for subsequent years the 1974-75 production data were used.

2. Numbers in parentheses are the percentage points due to quantitative import restrictions.

SOURCE: I.A.C. Approaches to General Reductions - Protection, Information Paper No. 1, Trends in the Structure of Assistance to Manufacturing, May 1980.

Footwear industry there is even a greater deterioration in competitiveness. The average effective tariff rate protecting this industry increased from 63 per cent in 1973/74 to 149 per cent in 1977/78 and again almost all the increase in the effective tariff rate is attributable to the import quota.

The remaining parts of the analysis of the last five years of Australian economic history are puzzling. They suggest that to limit the analysis of structural change to the effects on industries of real exchange rate changes which are primarily to be explained in terms of the development of a new export or import replacement sector may be an inadequate method of analysis in the longer term. They suggest that a more comprehensive model is needed.

First, the real exchange rate appreciations appear to have been temporary (Figure 1). By 1978/79 the real exchange rate appears to be lower than it was in 1968/69. According to the analysis developed earlier, not only should this not have occurred, but given the exchange rate changes that did occur, the pressure on the manufacturing sector should have ameliorated. Manufacturing should have gained in strength, relative to imports and relative to other sectors.

There are therefore two questions to be answered. Why has the real exchange rate devalued, and why despite the devaluations have the quantity adjustments continued in the direction that was predicted?

Consider the real exchange rate devaluations. It is possible that there are other exogeneous changes in the Australian economy which have more than offset the effects of the mineral developments. An indication of possible changes may be found in Table 7, which presents the Australian balance of payments over the period 1969/70 to 1979/80. It is apparent from Table 7 that the item which has changed most in relation to other items is private capital inflow. Over the period 1969/70 to 1971/72, the three years before the exchange rate appreciation, private capital inflow averaged 27 per cent of the value of exports. Private capital inflows were obviously a strong force leading to, or facilitating, the exchange rate appreciation. Over the three years, 1973/74 to 1975/76, private capital inflow fell to 6 per cent of export values. Finally, in the last three years, 1977/78 to 1979/80 private capital inflow has marginally increased to 7 per cent of the value of exports.

TABLE 7: Balance of Payments: AUSTRALIA

Item	1969 -70	1970 -71	1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78	1978 -79	1979 -80
Exports	3 967	4 230	4 740	6 010	6 688	8 490	9 459	11 363	12 016	14 092	18 723
Imports	3 553	3 790	3 791	3 808	5 754	7 652	7 924	10 345	11 165	13 493	15 810
Balance of trade	414	440	949	2 202	934	838	1 535	1 018	851	599	2 913
Net invisibles	-1 106	-1 207	-1 260	-1 447	-1 764	-1 784	-2 607	-3 091	-3 379	-3 790	-4 080
Current account balance	- 692	- 767	- 311	755	- 830	- 946	-1 072	-2 073	-2 529	-3 192	-1 167
Government capital inflow	- 185	- 63	- 60	- 64	- 22	- 24	- 93	249	1 564	1 355	- 76
Private capital inflow	820	1 435	1 269	427	174	714	706	1 536	846	1 785	9[illegible]a
Net apparent capital inflow[a]	728	1 365	1 785	315	395	482	53	1 582	1 987	3 068	858
Net official monetary movements	37	598	1 474	1 071	- 435	- 464	-1 019	- 493	- 542	- 124	- 310
Official reserve assets[b]	1 538	2 280	3 737	4 248	3 560	3 493	3 086	3 312	3 225	3 885	5 621

[a] Includes balancing item

[b] Since June 1973, official foreign exchange assets have been valued at market rates of exchange. Also, from June 1976 holdings of gold in official reserves have been valued at market prices.

SOURCE: Australian Bureau of Statistics

Why have private capital inflows reduced in importance? Not a great deal is known as to the determinants of private capital inflows into the Australian economy. It seems likely that there are two important influences. First, a significant proportion of capital inflows probably relate closely to the rate of growth of the Australian economy. When economic growth is slow, private capital inflows are reduced. The growth rate of the economy since 1973/74 has been very poor indeed. Between 1965/66 and 1973/74, the output in the non-farm market sector grew by 5.6 per cent per annum. Between 1973/74 and 1978/79, the growth rate has been approximately 1.3 per cent per annum. In this environment all investment has been depressed.

Second, another important determinant of private capital inflows may be the rate of interest in Australia relative to the rate of interest overseas. Interest differentials do not appear to be an important part of the story, at least in the first three years after the real exchange rate devaluations, but recently there is evidence that Australia has been able to hold the interest rate at a lower level than that prevailing overseas and thus discourage capital inflows. The extent of the interest gap can be seen in Figure 2.

It is essential that more work be done on the determinants of private capital inflow. Not only because they appear to be associated with real exchange rate appreciations and devaluations in Australia, but also because Forsyth and Kay recommend that some of the adjustment to be imposed on the UK manufacturing sector by the discovery of North Sea oil can be avoided by the encouragement of the export of foreign capital.[1/] Similar recommendations were made in Australia. What has occurred there is not so much that capital outflow has increased but that capital inflow has been reduced.

1/ They say, "Investment abroad could seem to have considerable attractions. ..... it reduces the requirement for temporary structural adjustments and readjustments in the UK economy." Forsyth and Kay, op. cit., p.

Another possible explanation of the exchange rate changes is that there is always considerable over- and undershooting in the exchange rate market so that there are cycles around a long-run equilibrium exchange rate. It is possible that the exchange rate appreciations in 1973/74 overshot the long-run equilibrium and since that time there has been an undershooting so that in the longer terms the exchange rate will again appreciate. A number of influential commentors on the Australian economy appear to believe that this is likely.[1/]

We now turn to why the quantity adjustments have continued as predicted although the appreciation of the real exchange rate has not been maintained There are two particular quantity adjustments to be explained (a) the general decline in manufacturing relative to other sectors and (b) the particular behaviour of those industries where international competitiveness declined most during the period of exchange rate appreciations.

The decline in manufacturing relative to other sectors of the economy is not unique to Australia. It appears to be a world wide phenomenon amongst developed countries. Changes in employment for manufacturing industry and for the economy in total in a number of OECD countries are presented in Table 8. In the seven countries shown, employment in manufacturing as a share of total employment has fallen. Since 1974 there is a marginal acceleration in the trend of employment away from the manufacturing sector, but for West Germany and Japan, the decline in manufacturing employment is a sudden and relatively new phenomenon associated with the reduction in their output growth rate since 1973/74.
It appears from the data of Table 8, that the Australian employment experience is not very different from other countries. Consequently, the mining sector explanation of the decline of the manufacturing sector in Australia is weakened. Of course, as indicated earlier, the effective tariff rate equivalent of the import quotas in a number of industries has increased and this would have reduced the tendency for manufacturing to decline. It is clear, however, that before a final judgment can be made as to the relevance of the model, what is needed is a more detailed analysis of employment changes

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1/ OECD, op.cit, p.37, J.O. Stone, op.cit, p.

TABLE 8: **Employment Indexes, OECD countries - Total Civilian employment and manufacturing employment (including self-employment)**

1965 = 100

	United States		Japan		West Germany		Canada		United Kingdom		Sweden[1]		Australia	
	Man	Total	Man	Total	Man	Total	Man	Total	Man	Total	Man	Total	Man	Total
1968	100	100	100	100	100	100	100	100	100	100	100	100	100	100
1969	102	103	104	101	106	101	103	103	102	100	99	101	103	103
1970	98	104	108	102	109	103	101	105	104	100	93	103	105	107
1971	94	104	108	102	109	103	100	107	94	98	92	103	105	108
1972	97	108	106	102	107	102	101	111	90	98	91	103	105	109
1973	102	111	106	105	107	103	106	116	91	101	93	104	107	112
1974	102	113	105	105	102	101	110	121	91	101	98	106	107	115
1975	93	112	105	104	95	97	104	124	87	101	99	109	99	114
1976	96	115	97	105	93	96	105	127	84	100	96	109	98	116
1977	99	119	94	107	92	96	103	129	85	101	93	110	95	117
1978	104	124	90	108	92	97	105	133	85	101	89	110	93	117
1979	106	127	94	109	92	98	108	139	84	101	89	112	95	119

1 The term "industry" is used for the Swedish figures, not manufacturing. For 1970-1973, the figures refer to mining and manufacturing.

SOURCES: Main Economic Indicators, Historical Statistics, 1955-1971, OECD.
Main Economic Indicators, Monthly, various issues 1972-1980, OECD.

of different countries with specific account taken of the different degrees of oil self-sufficiency.

With respect to those individual industries where international competitiveness has deteriorated most in Australia, the underlying deterioration is all the greater when account is taken of the real exchange rate changes. The devaluation of the real exchange rate of approximately 15 per cent since 1974/75 has not been sufficient to halt the decline in competitiveness of these industries. The degree to which this is a part of the adjustment of developing countries to higher oil prices or an adjustment to other changes which are occurring in the developing countries is not known.

PART 4: CONCLUDING REMARKS

What general remarks may be made as to the Australian experience and may tentatively be offered as suggesting possible future developments in the UK and other developed countries that are oil sufficient?

First, it appears to be the Australian experience that for those industries which were to encounter increasing loss of competitiveness in future years the adjustment process was brought forward and accelerated by the exchange rate appreciations. Import quotas initially designed to help industries over difficult and short term adjustment periods now appear to be much more permanent than may have been expected at the time they were introduced. As the effective tariff rate equivalent of the import quotas continues to increase, the adjustment that would follow their removal is greater than would have been the case a few years ago. There is a moral here for the application of temporary adjustment measures. Import quotas do not appear to be desirable policy response.

Second, given that the real exchange rate has devalued over the last few years and given the very sharp rise in the exchange rate that occurred in the short period 1972/74 which helped to create a serious recession in the Australian economy, there is a suggestion that the exchange rate change could have been more carefully managed by the application of appropriate micro-policies. It has been suggested that the Australian Government appreciated the exchange rate too late and as a result the exchange rate appreciation overshot. If the exchange rate changes had not been quite so sudden, it is possible, but not that likely, that the introduction of import quotas may have been avoided.

Third, it is our belief that the model discussed in this paper is particularly useful at bringing out some of the key issues in the need for structural change in the face of large changes in the price of oil.[1/] However, it is also clear, given that the exchange rate has now devalued, that if history is to be described closely a more general model should be applied. In particular it seems necessary that adequate account be taken of monetary variables and capital flows.

1/ The choice of model to explain changes in industrial structure is very important. Different models lead to different policy prescriptions. The model developed by Gregory (1976) and Forsyth and Kay (1980) not only "explains" the decline in manufacturing competitiveness, but treats it as a desirable adjustment to the development of a new sector which has a major impact on the balance of payments. A completely different view can be found in

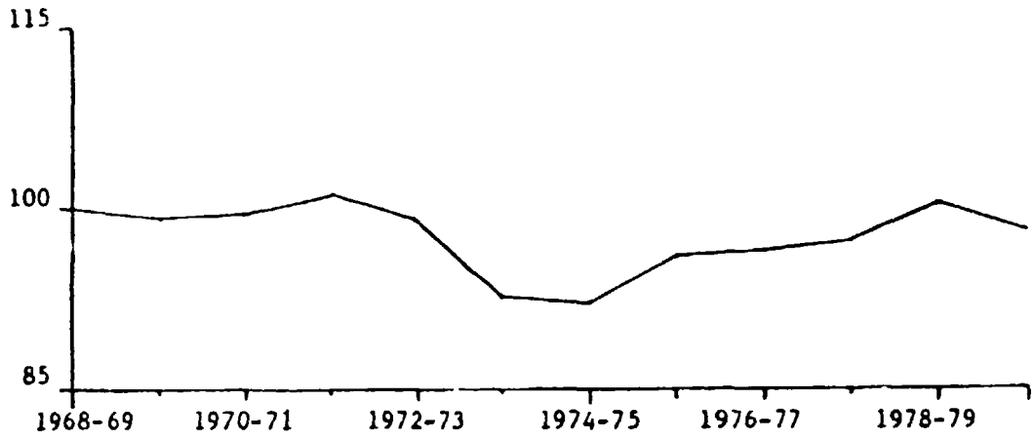
"North Sea Oil and the Reconstruction of UK Industry" by A. Singh, in De-industrialization, ed. by Frank Blackaby. Heinmann Educational Books, London, 1978.

There it is argued that the experience of manufacturing industry in the Netherlands and Norway as these countries lost competitiveness as they adjusted to the structural change from the new energy sources is an undesirable experience and one that should be avoided. Singh advocates that the UK adopt import controls to protect the manufacturing sector against the adjustments that are regarded as desirable by the Gregory (1976) and the Forsyth and Kay (1980) analysis. Singh argues that import controls would enable the UK economy to grow quicker which in turn would strengthen the industrial sector. The view that import controls reallocate the necessary and desirable adjustment to somewhere else in the economy where the benefit is less and that import controls act as an export tax appears not to be accepted. Singh states,

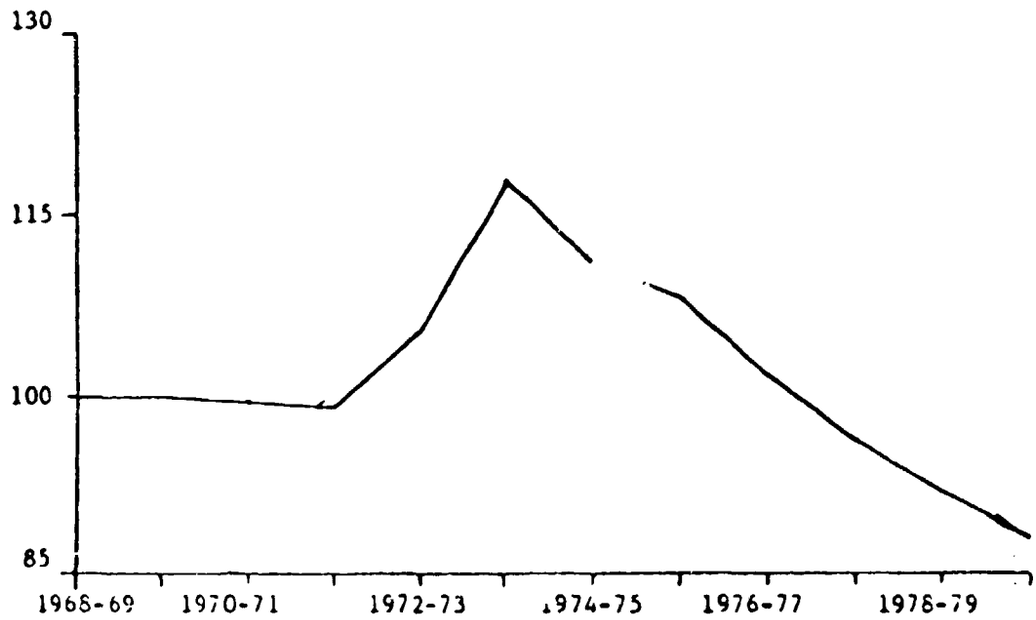
"In conclusion, in order for the country to make the best use of the North Sea Oil period to strenghten its manufacturing base, it would be necessary to institute a relatively long period of import controls against finished manufactures. Without such controls (or a continuing effective depreciation of the currency), the long run prospects for UK industry are not encouraging - a situation which, in turn, has very serious implications for future employment and living standards when the oil reserves begin to decline". Singh, op.cit, p.223.

FIGURE 1: Movements in Relative wholesale prices and the Effective Exchange Rate: AUSTRALIA, 1968-69 to 1979-80

(i) Relative Wholesale Price Movements [a]



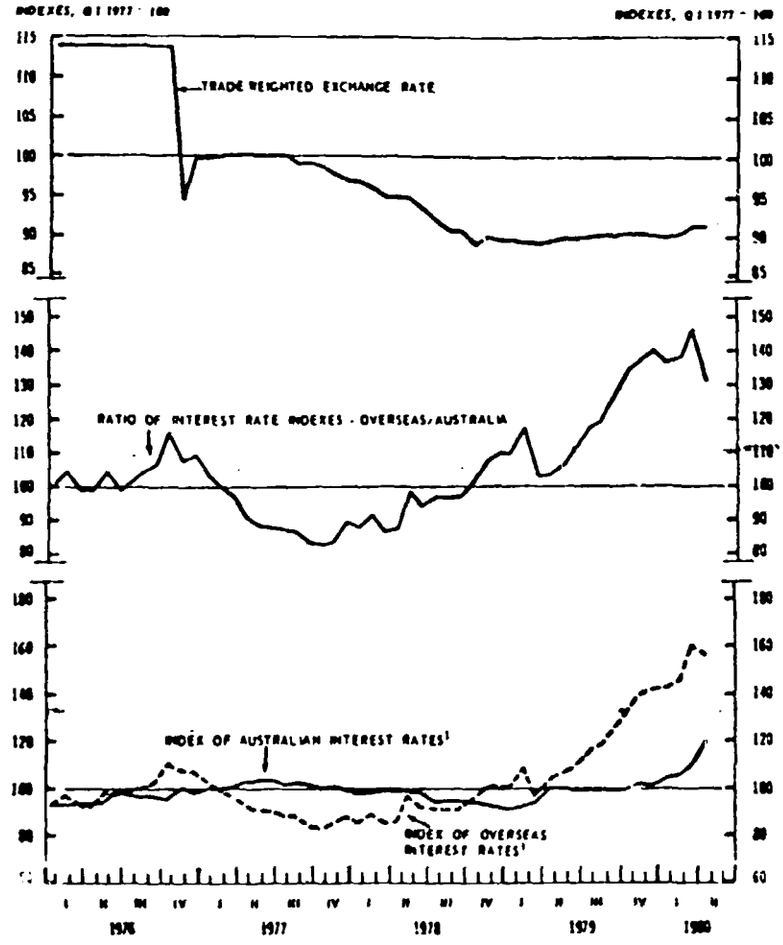
(ii) Import Weighted Effective Exchange Rate



[a] The wholesale price index is an import weighted average of the ratio of Australian wholesale prices relative to foreign wholesale prices. A downward movement in the ratio implies an improvement in the ability of industries to compete against foreign suppliers.

SOURCE: Industries Assistance Commission, Annual Report, 1979-80

FIGURE 2: Exchange rate, and interest rate differentials: AUSTRALIA



1 Indexes relate to a range of money-market activities. Overseas index relates to relevant major countries.

SOURCES: Statistical Bulleting, Reserve Bank of Australia; SYNTEC OECD, Economic Survey, Australia 1980

COMMENT BY PROFESSOR ASSAR LINDBECK

The general problem posed by Gregory has been baptized in Europe as the Dutch disease. Some years ago, the Dutch discovered natural gas in large quantities, the price of which was closely related to oil. As a result of the discovery of a new energy sector, the Dutch exchange rate, and inflation rate, increased relative to her trading partners in much the same way as the Australian experience and thus Dutch industry lost international competitiveness. Profits were squeezed, investment fell and unemployment increased. That disease has spread to many countries. It came to Australia as the mineral disease and to Norway as the oil disease. In each instance the adjustment appears to have involved a contraction of manufacturing as a result of the change in the relationship between the balance of payments and the rest of the economy.

The mirror image of this experience, as Gregory has said, is the experience of those countries that need to import most of their energy requirements. Japan and most countries in Western Europe that do not have oil resources need to expand their manufacturing exports and/or reduce their manufacturing imports to pay for their increased oil bill. To date, and to a very large extent, they have been unable to do so and instead operate with large current account deficits. In some instances these current account deficits are as high as three or four per cent of GNP.

The question is why are these countries unable to make the required adjustment? There are a number of reasons why they have been unable to reallocate their manufacturing output in the way required.

The most obvious reason, when looking at the group of oil-importing countries as a whole, is the limited capacity of the oil-exporting countries to absorb increased imports of goods and services. As long as this is the case, the "mirror image" will necessarily be current account deficits in the rest of the world. However, there are also more specific reasons for specific countries for the limited ability to adjust.

First, there seems to have been a trend in the sixties and seventies for the level of profitability in manufacturing to fall also in the oil-importing countries. For many of these countries it has, therefore, been difficult to develop an expanding manufacturing sector in which to invest and in which a reasonable rate of return can be earned. I am not completely sure as to the reason for this low profitability but some argue that labour unions have competed away profits. That, however, could hardly have been the case for all countries. For, why have not then manufacturing prices increased so that normal profitability is restored? One possible reason is that there has been increasing international competition in manufactured goods so that individual manufacturing companies now have less market power. This is, I believe, a more likely explanation. Let me expand that point somewhat.

Immediately after World War II, the United States and perhaps Switzerland and Sweden were the only countries that produced sophisticated manufacturing goods. The manufacturing sectors in the rest of the world were destroyed - or not yet much developed. Then as time passed, Europe was able to re-establish its position. Japan developed her manufacturing capabilities and Eastern Europe became increasingly industrialized. Finally, there is now strong competition from a number of developing countries. We would expect that this increased international competition in manufactured goods has led to lower profit margins and lower rate of investment. This sequence of increased international competition, lower profit margins and lower investment has placed an obstacle in the path of the reallocation of resources that is needed in the developed countries. A second possible reason why manufacturing output has not properly adjusted to the new environment is the increased level of inflation in developed countries. Higher and unacceptable rates of inflation have pushed most governments into adopting restrictive demand management policies. These policies have led to low level of capacity utilization and low output growth rates and as a result low rates of investment, which in turn has helped to keep down the growth rates. Without adequate investment, manufacturing have difficulties to adjust.

Third, recent policies in labour markets, and for industry, has led to more rigidities in the economic system, at the very time that there is an increased need to reallocate resources. For instance, there has been a redefinition of full employment. In the seventies, it has been redefined to also include guarantees for specific jobs in specific sectors in specific towns. If full employment is redefined in this way reallocation of labour that the economy needs will become very difficult and in that situation, new manufacturing will not easily develop. The labour subsidies to existing firms that are now common in many parts of Europe are quite significant. For example, in Sweden today the subsidies available to the shipbuilding industry amount to twice the level of the wage bill. In that sector the value added, measured at international prices, is negative. In other words, excellent material and intermediary products are simply destroyed in the production process.

Fourth, there has been tendency for the public sector to expand rapidly in most developed economies and hence to utilize those factors in production which otherwise could have gone to manufacturing.

Let us now turn to the developing countries. What are the implications of this analysis for them. Most developing countries are oil-importing countries. They seem to be hit on a number of fronts by the increased oil prices. Let me make two points on that issue.

First, those countries have the same adjustment problems as the oil-importing developed countries. They have to pay for their oil bill by exporting more raw materials or more manufactured goods. However, there is not increased competition from the oil-importing developed countries, such as Japan and Western Europe as they, too, attempt to increase their exports.

Second, exports from developing countries are hindered by the reduced rate of growth of their export markets in the developed countries when those try to protect themselves from the reallocation of resources that is needed and when they also attempt to fight

by adopting policies that lead, in the short and medium terms, to slower output growth rates. It seems that the bright prospective for the developing countries in the beginning of the 1970s are not so evident in the beginning of the 1980s.

I would like to make one final comment. Often in discussion of the future of the manufacturing sector it is implied that employment in manufacturing is inherently better than employment elsewhere. The assertion seems to be that the service sector is somewhat not as productive or "valuable" as the manufacturing sector. That assertion is of course, rather dubious. It seems rather that, for many countries with high income levels it is the services sector that will become increasingly important. In oil-exporting developed countries, we may expect that manufacturing goods will largely be imported, while services for the national markets will largely be domestically produced. In oil-importing developed countries we would expect an expansion of exports of services. This would then provide some "room" for increased manufacturing exports of non-oil exporting developing countries.

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