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INDUSTRIAL DEVELOPMENT REVIEW SERIES

GHANA

Prepared by the
Regional and Country Studies Branch

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Preface

This series of industrial development reviews on developing countries is prepared within the framework of UNIDO country studies by the Regional and Country Studies Branch.

The reviews provide a brief survey of the economy and broad analyses of the respective country's industrial sector. While the reviews are comprehensive in nature they are limited in scope and do not represent an in-depth assessment of the industrial development process in the countries concerned. They are intended to serve several purposes: to provide an information service to relevant sections within UNIDO and other international organizations and aid agencies concerned with technical assistance to industry; to serve as a handy, useful information source for policy-makers in developing countries; and to be used as a reference source for industrial entrepreneurs, financiers and economic researchers.

The reviews draw primarily on information and material available at UNIDO headquarters from national and international statistical publications as well as data contained in the UNIDO data base. No specific field survey was undertaken. Since up-to-date national statistical data usually are not complete, it is evident that the reviews will need to be updated periodically. To supplement efforts under way in UNIDO to improve the data base and to monitor industrial progress and changes on a regular basis, it is hoped that the appropriate national authorities and institutions in the respective countries and other readers will provide UNIDO with relevant comments and information. Such response will greatly assist in updating the reviews.

The present Review was prepared on the basis of information available at UNIDO headquarters in mid-1986. It is divided into two rather distinct parts. Chapters 1 and 2 are analytical in character, giving first a brief overview of the country's economy and its manufacturing sector and then a more detailed review of the structure and development of its manufacturing

industries. Chapter 3 contains various kinds of reference material on national plans and policy statements relevant to industrial development and on the more important governmental institutions, with particular reference to institutional restructuring for improving management efficiency. Chapter 3 ends with a brief analysis of manufacturing problems and prospects, with a focus on the role of technical assistance to industry. The Review also contains relevant basic indicators and graphical presentation of manufacturing trends as well as statistical and other appendices.

It should be noted that the reviews are not official statements of intention or policy by Governments nor do the views and comments contained therein necessarily reflect those of the Government.

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EXPLANATORY NOTES

Regional classifications, industrial classifications, trade classifications and symbols used in the statistical tables of this report, unless otherwise indicated, follow those adopted in the United Nations Statistical Yearbook.

Dates divided by a slash (1984/85) indicate a crop year or a financial year. Dates divided by a hyphen (1984-85) indicate the full period, including the beginning and end years.

References to dollars ($) are to United States dollars, unless otherwise stated.

In tables:

Three dots (...) indicate that data are not available or are not separately reported;
A dash (-) indicates that the amount is nil or negligible;
A blank indicates that the item is not applicable;
One dot (.) indicates that there is insufficient data from which to calculate the figure;

Totals may not add precisely because of rounding.

Basic indicators and graphical illustrations of manufacturing trends contained in this Review are based on data sourced from the UNIDO data base, international organizations, commercial and national sources.

The following abbreviations are used in this document:

BOG	Bank of Ghana
¢	Cedi (Ghanaian currency)
CBS	Central Bureau of Statistics
DRC	domestic resource cost
ERP	Economic Recovery Programme
FPIB	Forest and Products Inspection Bureau
GDP	gross domestic product
GIHOC	Ghana Industrial Holding Corporation
GNP	gross national product
GSB	Ghana Standards Board
GTMB	Ghana Timber Marketing Board
IDA	International Development Association
IMF	International Monetary Fund
ISIC	International Standard Industrial Classification
MVA	manufacturing value added
SEC	State Enterprise Commission
SITC	Standard International Trade Classification
SOE	State-Owned Enterprise
SUL	Special Unnumbered Licenses
NIC	National Industrial Company
TEDB	Timber Export Development Board
UNDP	United Nations Development Programme

BASIC INDICATORS 1
The economy

GDP (1985): $5,081 million[a/]

Population (1985): 12.61 million

GDP per capita (1985): $403

Labour force (1983): 4.627 million

Annual growth of GDP (per cent):

1966-73	1973-83	1983	1984	1985
3.4	-0.9	0.7	7.6	5.3

Distribution of GDP (percentage):

	1965	1977	1984
Agriculture	48.2	53.0	51.0
Industry	18.0	16.0	9.0
Manufacturing	9.7	11.0	5.0
Services	33.8	31.0	40.0

Rate of inflation (per cent):

1965-73 [b/]	1973-83 [b/]	1983	1984
8.1	52.2	121.9	39.7

1985	1986
10.3	11

Exchange rate (Cedi equivalents to $1):

1981	1982	1983	1984	1985	October 1986
2.8	2.8	3.5	35.3	54.1	128

Resources:

Agricultural production (1985) ('000 tons): Cassava (3,076), yam (485 4), maize (411), cocoa (200), rice (90), sorghum (62.3), millet (53.7)

Fishery production (1983) ('000 tons): Marine fish (180), freshwater and diadrom (46), shell fish (2)

Forestry production (1983) ('000 cubic metres): Industrial roundwood (2,517), sawnwood and panels (442)

Livestock (1984) ('000): Sheep (2,000), goats (2,000), cattle (810), pigs (375)

a/ Estimate.
b/ Average annual rate of inflation.

BASIC INDICATORS 2

Foreign trade and balance of payments

EXPORTS:	
Total value:	$610 million (1985)
Principal exports (1985): ($ million)	Cocoa beans (320), gold (98), timber (30)
Main destination (1984): (per cent)	USSR (25.3), UK (12.4), Japan (10.8), Federal Republic of Germany (7.1), Other (44.4)
IMPORTS:	
Total value:	$727 million (1985)
Principal imports (1985): (per cent)	Capital goods (25.3), fuels and lubricants (15.9), chemicals (12.3), manufactures (11.0), food products (5.8), other (29.7)
Main origins (1985): (per cent)	Nigeria (21.8), UK (17.7), Federal Republic of Germany (7.7), US (7.4), other (45.4)
International revenues minus gold (1985):	$478.5 million
Balance of payments (1986): (current account deficit)	$212.2 million[a/]
Public foreign debt (1984):	$1,122 million[b/]
Debt servicing obligations (1986):	$677 million[a/]
Debt service ratio (1986): (as per cent of exports)	63 per cent[a/]

a/ Preliminary estimate.
b/ Disbursed.

BASIC INDICATORS 3
The manufacturing sector

MVA (1985):	$254 million[a/]				
MVA per capita (1985):	$20				
Annual growth rate of MVA: (per cent)	1966-73	1973-83	1983[a/]	1984[a/]	1985[a/]
	6.5	-6.9	-11.3	14.2	5.4
Composition of MVA: (percentage)			1962	1979	1982
	Food, beverages and tobacco		24.2	10.8	25.0
	Wood products		33.8	7.4	8.2
	Textiles		0.2	10.6	7.0
	Other		41.8	71.2	59.8
Ownership structure: (percentage)				1962	1982
	Wholly State-owned			11.8	33.4
	Joint State-foreign			7.1	15.8
	Joint private-foreign			4.8	25.5
	Wholly private-foreign			63.2	8.6
	Wholly private-domestic			13.0	16.7
Manufactured exports[b/] (1981):	$5.3 million				
Share of manufactured exports in total exports:	0.06 per cent				
Manufactured imports[b/] (1981):	$676.6 million				
Share of manufactured imports in total imports:	53.1 per cent				

a/ Estimate.
b/ SITC 5-8 less 68.

BASIC INDICATORS 4

Inter-country comparison of selected indicators

	Unit	Cameroon	Côte d'Ivoire	Ghana	Nigeria	Senegal
I. Demographic indicators						
Population (mid-1984)	millions	9.9	9.9	12.3	96.5	6.4
Population growth (1973-84)	per cent per annum	3.1	4.5	2.6	2.8	2.8
Infant mortality (1984)	per 1,000	92	106	95	110	138
Area (1983)	thousand km^2	475	322	239	924	196
Density (1984)	persons per km^2	21	31	19	104	33
II. Economic indicators						
GDP (1984)	$ million	7,800	6,690	4,485	73,450	2,390
GNP per capita (1984)	$	820	710	350	770	260
Average annual growth of GDP (1973-1983)	per cent	7.1	3.7	-0.9	0.7	2.6
Agriculture (1984)	per cent of GDP	22	26.7	51	27	17
Industry (1984)	per cent of GDP	35	22.9	9	30	28
Manufacturing (1984)	per cent of GDP	11	10.9	5	4	18
Services (1984)	per cent of GDP	43	50.4	40	43	55
Exports of goods and non-factor services (1984)	per cent of GDP	32	46	11	16	29
Gross domestic investment (1984)	per cent of GDP	26	13	6	12	15
External public debt (1984)	per cent of GNP	31.3	107.5	22.9	17.0	69.4
III. Industrial Indicators						
MVA (1982)	$ million 1975	715	1,204	211	4,252	640
Share of MVA in GDP (1984)	per cent	11	10.9	5	4	18
Average annual growth of MVA (1973-1983)	per cent	13.5	5.0	-6.9	8.5	4.1a/
Share of manufactured exports in total exports (1982)b/	per cent	7.5	10.7	1.6	...	19.5c/
MVA contribution to world MVA (1981)	per cent	0.02	0.04	-	0.18	-

a/ 1970-1981. b/ SITC 5 to 8 less (67 + 68). c/ 1981.

Executive Summary

Ghana has been gradually emerging from its most serious economic crisis since indep ndence. Positive growth rates have been achieved during both 1984 and 1985 and prospects for 1986 are good. This economic recovery has been made possible by the implementation of the Economic Recovery Programme (ERP) with the aid of financial support from the IMF, the World Bank and other agencies. This Programme was initiated in 1984 and has now been extended to 1988. The ERP emphasizes the need to stimulate growth, reduce the budget and trade deficit and limit the growth of money supply. Despite relative success in the past few years, however, Ghana continues to face a difficult economic situation due to rising debt service payments. The Government estimates that unless substantial rescheduling can be arranged, debt servicing charges would absorb 63 per cent of total export earnings by the end of 1986. A shortage of foreign exchange is the most important constraint on Ghanaian development, particularly on the manufacturing sector.

In 1970 Ghana possessed one of the largest and most diversified manufacturing sectors in Africa. MVA had expanded rapidly during the 1960s. The period 1970-77 was one of stagnation. During 1977-83 MVA and manufacturing production contracted rapidly. Productivity levels fell. Capacity utilization was reduced to as low as 20 per cent in most industrial branches and the sectoral output level in 1984 was well below that of 1970. This contraction has largely been due to the excessive dependence of the manufacturing sector on imported raw materials, spare parts and technology.

Foreign capital retains a dominant position within Ghanaian manufacturing. More than 50 per cent of the value added within the large-scale manufacturing sector is produced by firms in which foreign capital participates. Both foreign firms and public manufacturing enterprises have produced good financial results in recent years, despite the heavy under-utilization of capacity. Excessive protection and the related growth of monopolistic structures in much of Ghanaian industry, however, have been major constraining factors.

The small-scale sector is wholly run by domestically-owned manufacturing enterprises. These have lower import dependency and have typically shown a greater capacity for increasing domestic resource use and for adopting imported technologies to suit local conditions. Their links with the large-scale sector remain tenuous and very few small-scale enterprises grow up to eventually enter the organized sector. The level of regional concentration of industrial units remains high.

The export performance of Ghanaian manufacturing is weak. The export output ratio does not exceed 2 per cent in most branches. On the one hand, export expansion is constrained by the relatively low product quality. Large modernization investments are indeed required to achieve international standards. On the other hand, world demand for manufactures in which Ghana would possess export potential (particularly processed cocoa products) is currently not particularly buoyant. More significant growth of manufactured exports may be achieved in new markets through more extensive regional co-operation.

The Government has been concerned about the foreign exchange constraints limiting the growth of Ghanaian manufacturing. In 1986 it obtained an IDA credit worth $ 53.6 million to finance essential industries and to facilitate the rehabilitation of manufacturing plants in key branches. The Government has sought to stimulate the inflow of direct foreign investment and to encourage investment in manufacturing by domestic firms. A liberal Investment Code was enacted in 1985 and a Statement on Industrial Goals and Policies was also published that year in which the Government explicitly commits itself to the pursuit of a mixed economy and a market-oriented industrial strategy. Extensive institutional reorganization has been undertaken to create a new incentive system for stimulating private sector initiative and for enhancing the operational efficiency of public manufacturing enterprises in Ghana.

Special emphasis is being laid on the development of industries which have a capacity for increasing domestic resource use. Small-scale enterprises are supported in this context. Given the constraints on the growth of the export markets an import-substituting industrialization strategy will need to

be pursued in order to reverse the process of de-industrialization which Ghana has been experiencing since 1977. It is also necessary to construct an industrial base for creating and sustaining a capacity for manufactured export growth in the long run. However, the strategy would need to be implemented with great selectivity so as to avoid inefficiencies of the past to re-emerge. It would seek to preserve and foster the establishment of inter-industrial linkages and the manufacturing sector's capacity for technological acquisition and adaptation.

Technical assistance is needed for restructuring production units in branches such as agro-industries, textiles and engineering. There is a particular need to provide an assessment of existing inter-sectoral linkages and to provide resources for strengthening these linkages. Assistance is also needed for a regulation of accountancy practices and for increasing the capacity for efficient management in both public sector and small-scale enterprises. Finally, attention should be paid to increasing regional economic co-operation as a means for stimulating export growth throughout the West African region.

1. THE ECONOMY OF GHANA

1.1 Recent economic trends

Since 1984 the Ghanaian economy has slowly been emerging from its worst ever crisis in recent economic history. Positive rates of GDP growth have been recorded in both 1984 and 1985 and prospects for sustaining growth during 1986 seem good. The agricultural sector has continued to experience rapid growth since the drought of 1983 and construction activity has also been booming. The rate of inflation has been reduced from 121.9 per cent in 1983 to about 11 per cent in 1986. The trade deficit however remains large and the debt-service ratio stands at an all time high of 63 per cent despite several reschedulings since 1983. Growth within the manufacturing sector is severely constrained by an acute shortage of imported inputs.

Improved weather conditions have played an important part in the economic recovery. The Government has also sought to stimulate economic activity by implementing a comprehensive Economic Recovery Programme (ERP). The ERP was launched in 1983 and was initially designed to cover a four-year period. It sought to restore production incentives, increase the availability of consumer goods, reduce inflation by strictly controlling public borrowing, rehabilitate the country's physical infrastructure, restructure economic institutions and augment the nation's foreign exchange resources at the end of 1985. The ERP was extended to cover the period 1986-88 and the Government laid renewed emphasis on the provision of incentives for stimulating production and accelerating the inflow of foreign exchange.

The ERP strategy has been supported by the provision of expanded concessional assistance by the World Bank and the IMF over the period 1983-85. Aid pledged at World Bank consultative group meetings during 1983-85 stands at $1.07 billion, but the rate of disbursement has been disappointingly low. Disbursement as a proportion of commitments fell from 35 per cent in 1984 to 31 per cent in 1985 and the 1986 figure is unlikely to be much higher. There has also been an IMF standby facility worth SDR 180 million which was fully drawn by December 1985. Discussions are under way for the

renewal of the facility (about SDR 140 million was requested) and for a Structural Adjustment Loan of $100 million from the World Bank. However, negotiations toward a three-year extended fund facility are proceeding slowly. In March 1986 aid worth SDR 70.6 million was sanctioned by the World Bank for industrial rehabilitation and development.

Multilateral assistance has been made conditional on the pursuit of the development strategy outlined by the Government in the ERP. The 1983 budget represents an important benchmark in this respect. Since then each successive budget has emphasized the need to reduce the budget deficit and expand government revenue. Government revenue doubled in 1985 compared with the 1984 level. The 1986 budget forecasts a 100 per cent increase in government revenue over the preceding financial year - large increases are expected in tax revenues and in receipts from taxes on international trade, especially cocoa exports. Last year's budget deficit was $1.1 billion lower than projected and the deficit for 1986 is expected to decline by a further 37 per cent despite a three-fold increase in government capital expenditure. This represents almost half of the public sector investment planned for the second phase of the ERP (1980-85). Major allocations include provisions for strengthening public enterprises, expanding education and social services and modernizing the transport system. The 1986 budget forecasts a proportionate reduction in the share of recurrent spending within the expenditure programme but pressure to maintain the public sector wage bill and the present level of government subsidies is likely to make this a difficult target to achieve.

Short-term trade prospects appear to be promising. Export revenue rose by 30 per cent during 1984 and by 34 per cent in 1985. Initial forecasts for 1986 are also good. This healthy export performance has been due to a rapid increase in producers' prices which have been increased several times since 1983. This has significantly raised cocoa production, which increased by about 20 per cent over the period 1983-85 and is expected to increase by about 14 per cent in 1986.

Since 1983 the Government has also promoted a massive official devaluation of the Cedi - its international value has fallen drastically from ₵ 3.5 = $1 in 1983 to ₵ 128 = $1 in October 1986. While stimulating the production of exportables, such a massive devaluation may have adversely

affected Ghana's international terms of trade, for the country is still a major exporter of cocoa. Moreover, in order to mitigate the impact of devaluation on the level of inflation, the Government has had to strictly limit the expansion of credit by the banking sector. This has severely constrained the ability of private sector firms to discharge import bills and the Bank of Ghana is considering during 1986 the introduction of a special import financing scheme to help companies obtain foreign exchange necessary for maintaining essential imports.

Despite export growth the trade gap for 1986 is expected to be about $100 million - slightly less than in 1985. Debt servicing obligations are likely to amount to $677 million and imports will amount to $840.7 million for 1986. Aid commitments for this year stand at $454.8 million. This leaves a net foreign exchange gap of $73.7 million which will have to be filled by additional foreign borrowing. This will inevitably increase Ghana's debt burden. As pointed out earlier, debt servicing already absorbs about two-thirds of the country's total export earnings.

Although significant progress has been made since 1984 the country remains heavily dependent on the inflow of foreign capital. The reforms undertaken during the past three years should ensure that positive growth is maintained in the major economic sectors during the next two years. This growth must be accompanied by fundamental structural change within these sectors in order to generate self-sustaining development capacity, reduce dependence on external capital - thereby lowering the country's crushing debt burden - and avoid relapse into the economic malaise of the 1970s. The next section reviews the structural change that has taken place in the Ghanaian economy since independence.

1.2 Economic structure

At independence in 1957 Ghana was probably the richest country in West Africa with abundant natural resources and a sizeable relatively homogeneous population.[1/] Today with a GNP per capita of about $350 it is classified

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1/ For an impact of colonial policy on Ghanaian development, see G.B. Kay and S. Hymer, The Political Economy of Colonialism in Ghana, Cambridge University Press, London, 1972.

by the World Bank as among the low-income group of developing countries and, unlike most West African countries, Ghana has had negative income per capita growth during 1965-84. With an estimated GDP of $5,081 million in 1985 Ghana is the fourth largest West African economy behind Nigeria, Côte d'Ivoire and Cameroon. These three countries have substantially higher levels of income per capita and the share of industry in their GDP has been rising over the past two decades. The share of industry in Ghana's GDP, however, has been falling during 1965-84 and in 1984 stood at just 9 per cent, as against 30 per cent for Nigeria, 27 per cent for Côte d'Ivoire and 22 per cent for Cameroon. Thus, unlike its larger neighbours, Ghana has experienced a significant level of de-industrialization during the 1970s and 1980s.

The growth performance of the Ghanaian economy can be subdivided into three distinct periods. In the years 1957-66 - under Kwame Nkrumah's administration - the economy grew at an annual average rate of about 4 per cent. Growth rates decelerated over the next 4 years but remained positive until 1970. Subsequently negative growth rates have been recorded for most years during 1970-83. The annual average rate of growth of GDP was slightly less than -1 per cent over the period 1970-83. Income per capita declined by more than 30 per cent over this period and real per capita income in 1984 (measured in 1975 prices) was 20 per cent lower than in 1970. Inflation was rampant during most of this period - reaching triple-digit level in the early 1980s - government revenue fell, the socio-economic infra- structure deteriorated and the external deficit grew rapidly. Since 1984, as noted earlier, the economy has registered positive growth rates. Agriculture has recovered particularly well, thanks largely to improved weather conditions and important parts of the industrial sector and the socio-economic infra-structure having been rehabilitated. During the crisis, gross fixed capital formation declined from 13 per cent of GDP in 1971 to 7 per cent in 1982 and the gross domestic saving ratio had fallen to about 4 per cent by 1983. Whereas investment has risen significantly during the past two years, domestic savings remain depressed despite a substantial increase in real interest rates since 1983.

Table 1 presents the sectoral composition of GDP for selected years during the 1965-84 period. The 1965-70 period was characterized by what is generally regarded as "normal" structural change. The share of agriculture

Table 1. Sectoral composition of GDP, 1965-84
(at current prices in per cent)[a/]

	1965	1970	1975	1977	1982	1983	1984
Agriculture	48.2	46	48	53	58	56	51
Agriculture & livestock	...	28	29	44	50	49	43
Cocoa	...	14	11	4	1	3	4
Forestry	...	3	6	4	4	2	2
Fishing	...	1	2	1	3	2	2
Industries	18.0	18	21	16	7	5	9
Mining	2.7	2	2	1	0	1	1
Manufacturing	9.7	11	14	11	4	3	5
Electricity & water	0.3	1	1	0	1	0	1
Construction	5.3	4	4	4	2	1	2
Services	33.8	36	31	31	35	39	40

Sources: UNIDO data base for 1965 and Central Bureau of Statistics for all other years.

a/ Totals do not add up to a hundred because of omissions and roundings.

declined and that of manufacturing expanded during this period. These trends were reversed during 1975-83 when the share of agriculture rose from 48 per cent to 56 per cent and that of manufacturing declined from 14 per cent to 3 per cent. The recession also saw a major drop in the share of cocoa production. In 1970 cocoa production and marketing accounted for 14 per cent of GDP. By 1983 this share had been cut to 3 per cent. The recession therefore created two major structural deformities in Ghana. On the one hand, there was a massive movement of resources out of export-oriented agriculture into traditional subsistence farming. On the other hand, there was extensive de-industrialization with capacity utilization rates being reduced to about 20 per cent in the early 1980s. The ERP is an attempt to check these trends. Recent estimates suggest that the share of cocoa production in GDP increased to 9 per cent and that of manufacturing increased to 5 per cent by the end of 1985.[1/]

1/ Economist Intelligence Unit, Ghana Country Profile 1986-87, London, 1986, p.13.

Rising cocoa production has meant rapidly growing export volumes in recent years. At independence Ghana was the world's largest cocoa producer with annual output exceeding 400,000 tons. Currently Ghana accounts for about 15 per cent of world production and is striving to achieve an annual production figure of about 200,000 tons. Cocoa still accounts for about 50 per cent of total exports. The other major export items are gold, timber and electricity. The share of manufactures in Ghanaian exports has remained very low. Thus, despite the relatively rapid growth since 1983, the structure of exports has been largely unchanged both in terms of product composition and market destination. Western Europe purchased roughly half of Ghana's total exports over the period 1970-82. The share of the USSR and Romania averaged about 13 per cent. The share of the United States was roughly similar and exports to the rest of Africa have tended to remain at about 2 per cent of the total throughout this period.

Ghana usually enjoyed a surplus on her balance of trade during the 1960s and 1970s, but the dramatic decline in cocoa production in the late 1970s and early 1980s has led to the emergence of a balance-of-trade deficit. As noted earlier, cocoa production has recovered significantly since 1983 but imports have tended to grow more rapidly than exports. The share of investment goods in total imports stood at 64 per cent in 1970. By 1981 this ratio had declined to 49 per cent due to a rapid growth in the price of fuel imports and the increasing need to import food. The ERP aims at reversing these trends and the Government has obtained multilateral assistance to enable Ghana to augment the supply of investment imports over the period 1986-88. An IDA loan of $40 million has been obtained in early 1986 to finance imports of industrial inputs and spare parts and some bilateral loans for a similar purpose are also under negotiation.

The country's reliance on foreign loans as a source for financing its current account deficit has grown rapidly. Most long- and medium-term loans have been obtained from official sources but the Government has had to borrow occasionally in the Euro currency markets. The net flow of foreign direct investment remains very small. Over the period 1980-84 it averaged about $8 million annually but there are indications that recent reforms in industrial policy are having a significant impact and foreign companies are showing renewed interest. The Government will have to continue to rely on

official loans as a major source of external finance and to cover a large part of the current account deficit which is estimated at $212.2 million in 1986.

Although outright grants represent a significant proportion of external funds, the debt servicing burden has continued to rise alarmingly in recent years. As Table 2 shows, long-term debt has remained high since 1980. The official creditors account for over 80 per cent of this total. The debt service ratio has risen consistently during this period. The Government estimates a much steeper increase in debt repayment obligation amounting to $407 million in 1985 and $468 million in 1986. According to these calculations the debt service ratio will rise to 63.6 per cent in 1986

Table 2. Public external debt, a/ 1980-84
(millions of dollars)

	1980	1981	1982	1983	1984
Total including undisbursed	1,535.0	1,503.5	1,499.5	1,475.6	1,470.9
Disbursed only	1,100.4	1,114.0	1,120.6	1,140.5	1,122.4
Of which:					
Official creditors	877.6	928.1	953.3	988.0	996.1
Multilateral	342.5	379.2	407.3	427.9	473.5
Bilateral	535.2	549.0	546.0	560.1	522.6
Private creditors	222.8	185.9	167.3	152.5	126.4
Suppliers	222.8	185.9	167.3	152.5	123.3
Financial markets	-	-	-	-	3.1
Use of IMF credit	43.2	28.2	21.4	280.1	467.8
Debt service	93.9	53.2	62.2	99.7	81.0
Of which:					
Principal	65.6	28.3	34.4	61.0	55.4
Interest	28.4	25.0	27.8	38.7	25.7
Disbursed debt/GNP (per cent) b/	24.9	25.8	26.7	26.7	23.4
Concessional loans share of disbursed debt (per cent)	63.5	65.4	66.9	66.8	69.6

Source: Economist Intelligence Unit, Ghana Country Profile 1986-87, London, 1986, p.19.

a/ Long-term debt (maturity over one year), including publicly guaranteed private debt.

b/ Debt service as percentage of exports of goods and services.

and will be 61.9 per cent at the end of 1988.[1/] Repayment obligations to the IMF account for roughly a third of total repayment obligations during this period and the share of interest payments is likely to rise from 34.1 per cent in 1983 to 42.5 per cent in 1987. It is thus of urgent importance to provide interest payment relief, accelerate the disbursement ratio and reduce the debt servicing burden on the Ghanaian economy.

These measures need to be complemented by the implementation of a development strategy which reduces the country's dependence on foreign capital and imported production inputs in the long run. Clearly the restructuring of the manufacturing sector must constitute an important element in such a strategy as the manufacturing sector has weak linkages with the rest of the economy and is itself highly dependent on imported inputs and foreign capital.

1.3 Overview of the manufacturing sector

Like most other African countries, Ghana has a manufacturing sector with a dualistic production structure. On the one hand, there are numerous small-scale - often one man - industrial enterprises which account for over three-fourths of total manufacturing employment but for only a quarter of the value of manufacturing production.[2/] On the other hand, there is a large-scale manufacturing sector which is widely diversified by African standards. Foreign firms participate in enterprises producing more than 50 per cent of MVA and include well known firms such as Cadbury's and Unilever. The share of wholly owned foreign firms in MVA declined during the 1970s but there has been a corresponding growth in joint ventures in both the private and public industrial enterprises. Public enterprises currently

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1/ The Government estimates of debt servicing obligation for 1983 and 1984 are also very different from those of the World Bank - $240 million as against $99.7 million for 1983 and $276 million as against $81 million for 1984.

2/ Detailed statistical information on small-scale enterprises is difficult to obtain - the latest major survey was conducted in 1973. It is known, however, that they are mainly concentrated in the apparel and metal working branches.

account for about 33 per cent of manufacturing output and 28 per cent of manufacturing employment. Domestic manufacturing enterprises (including those without foreign participation) produce only 16 per cent of gross sectoral output.

Major industrial branches include food processing (which currently accounts for over 40 per cent of MVA), chemicals and wood products. Production is mainly oriented towards serving the domestic market. Classified manufactures and miscellaneous manufactured articles accounted for about 12 per cent of total export revenue over the period 1970-81.[1/] Manufacturing enterprises depend very heavily on imported inputs in the form of both raw materials and capital equipment. The foreign exchange crisis of the last decade has severely restricted Ghana's importing capacity and this has led to the emergence of very low rates of capacity utilization within the manufacturing sector and the contraction of the share of manufacturing in GDP from 14 per cent in the 1970s to about 5 per cent today.

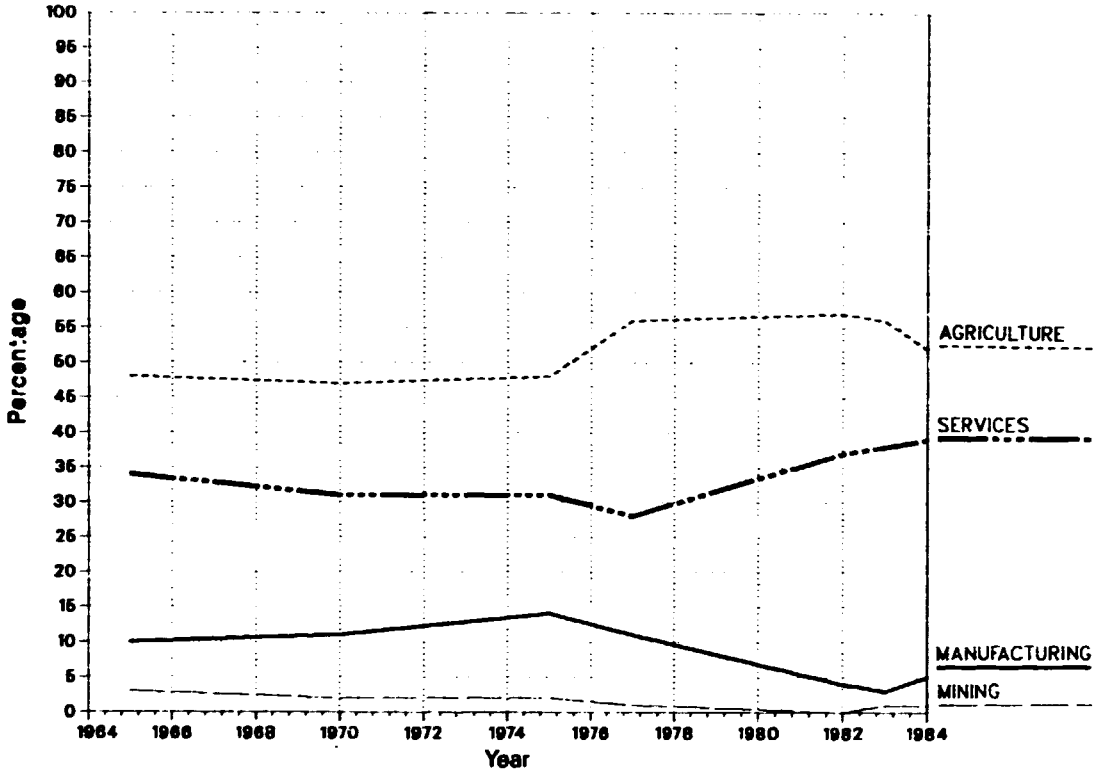
Revitalization of Ghanaian manufacturing requires an extension of inter-industrial linkages. A recent World Bank report has found that inter-industrial linkages are very weak within Ghanaian manufacturing.[2/] There are many gaps within the industrial sector, indicated by the very low level of domestic subcontracting undertaken by large- and medium-sized manufacturing enterprises. The filling of these gaps is an essential prerequisite for reducing the dependence of Ghanaian industry on imported raw material and on foreign capital. This would suggest that the industrial rehabilitation programme should not be concerned merely with issues of maximizing short-term efficiency but should attempt to evolve a strategy which gradually eliminates the structural deformities which have developed during two decades of economic crisis and create a basis for self-sustainable industrial growth in the Ghanaian economy.

1/ This proportion would be significantly higher if semi-processed aluminium and cocoa are included in manufacturing total.

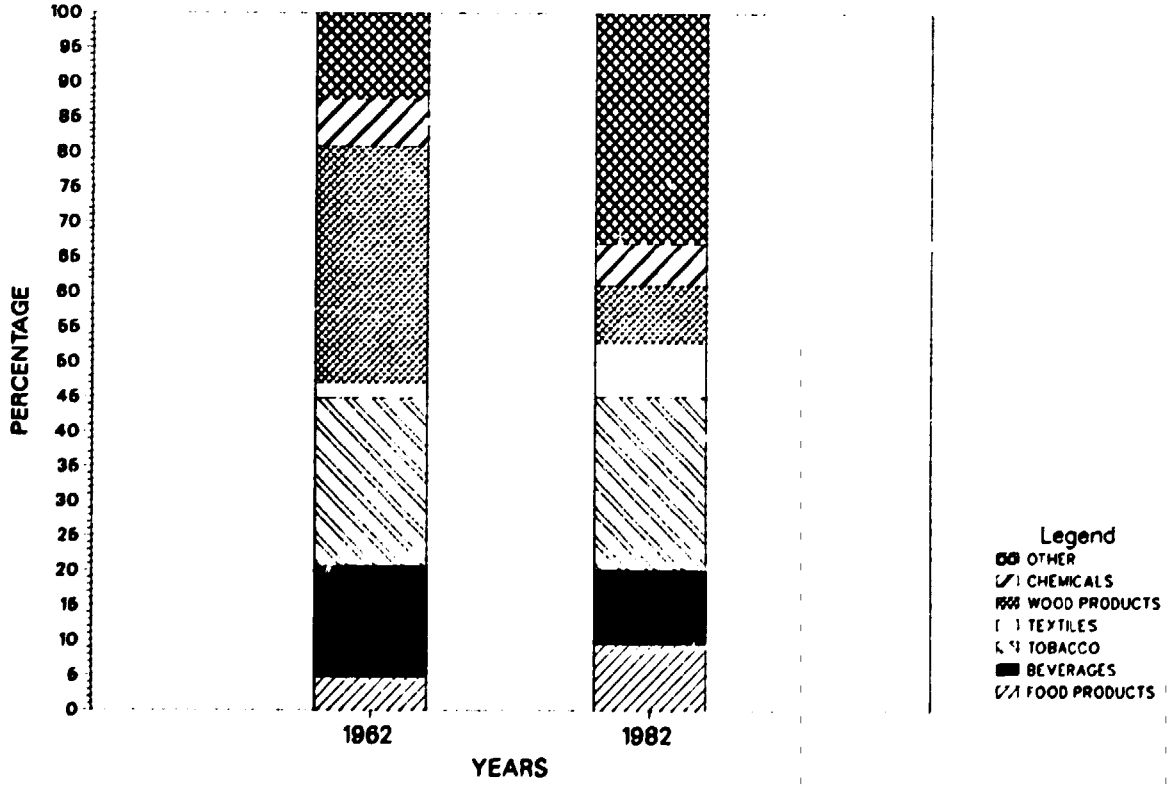
2/ World Bank, Ghana Industrial Policy, Performance and Recovery, Report No. 5716-GH, 1985, pp.25-42.

MANUFACTURING TRENDS

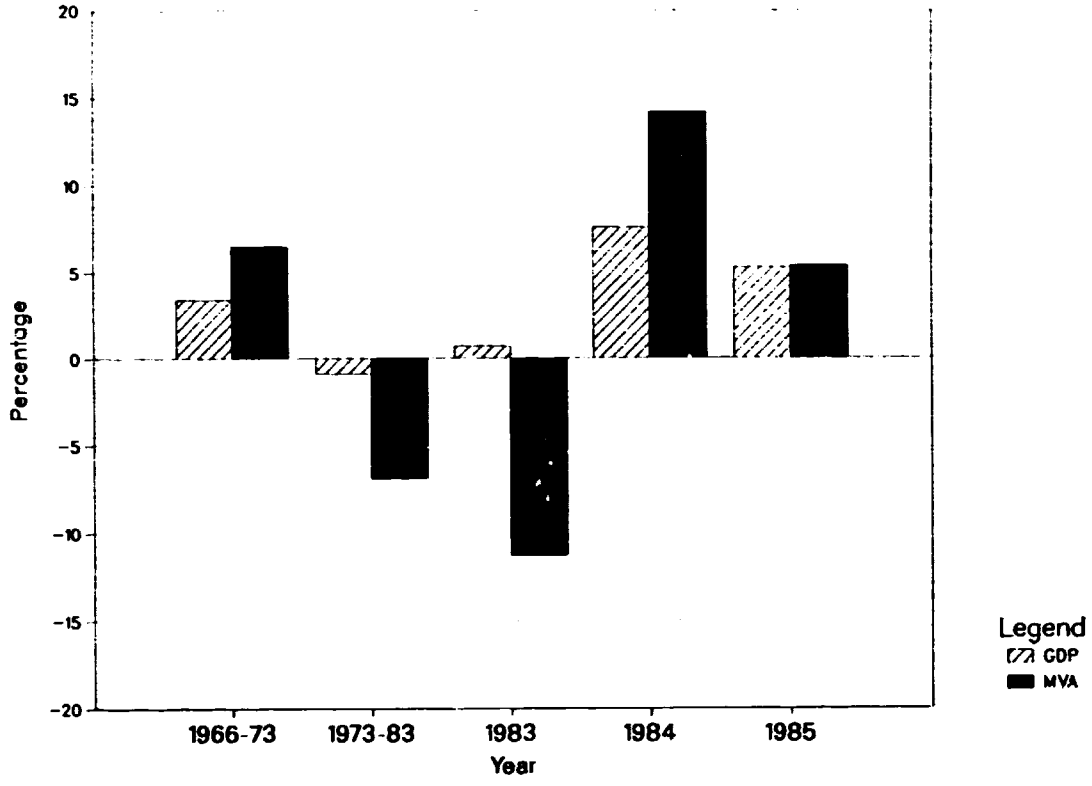
DISTRIBUTION OF GDP BY SECTOR OF ORIGIN, 1965-84
(at current prices)



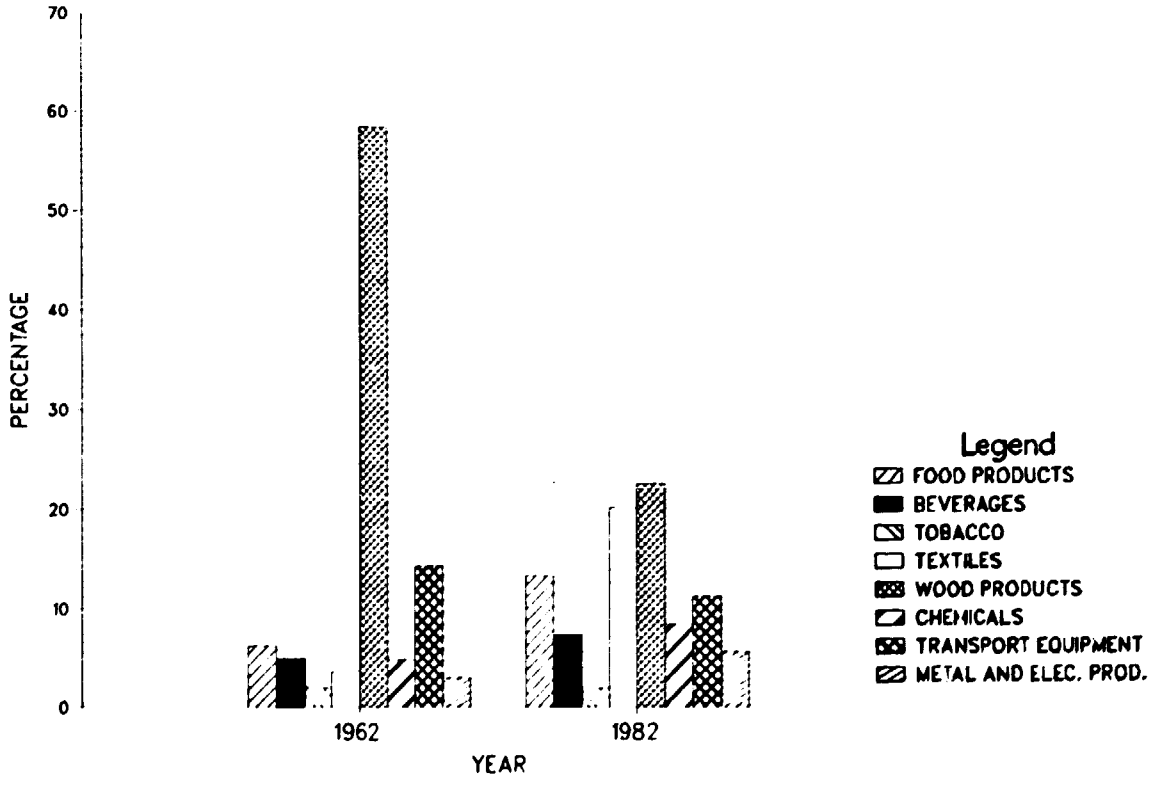
COMPOSITION OF MANUFACTURING VALUE ADDED, 1962 AND 1982



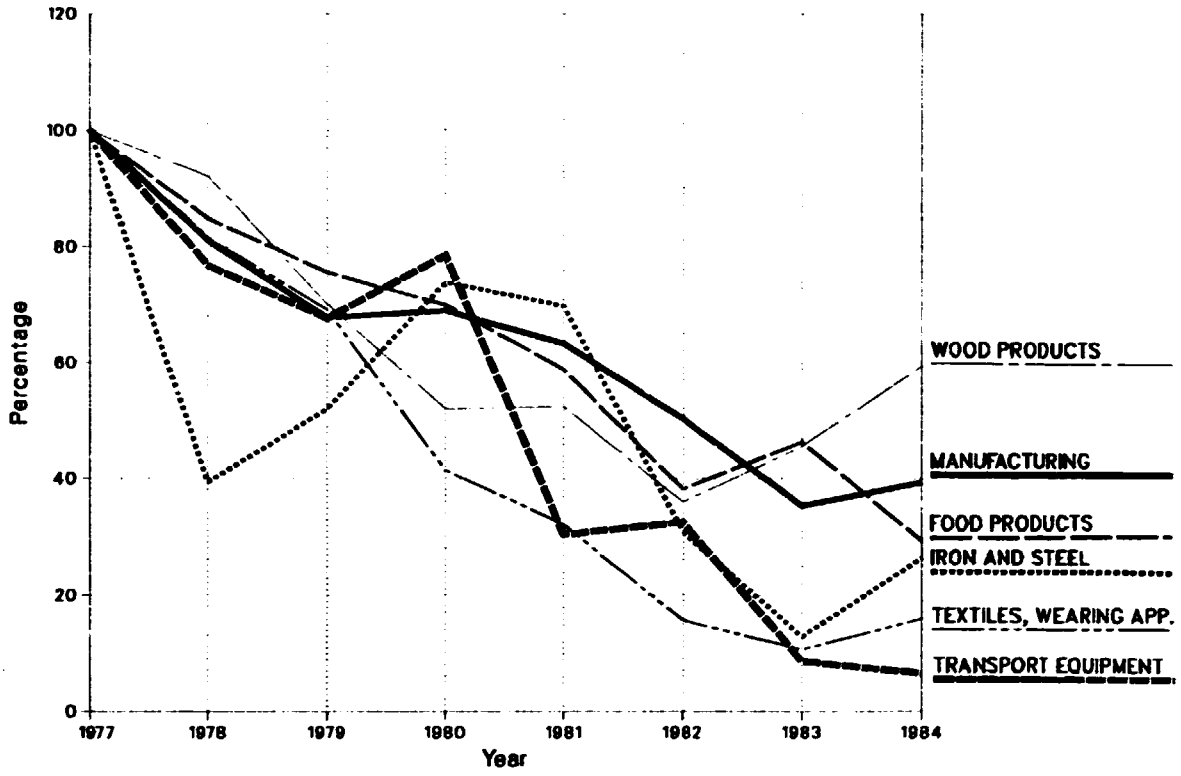
REAL GROWTH RATES OF GDP AND MVA, 1966-85



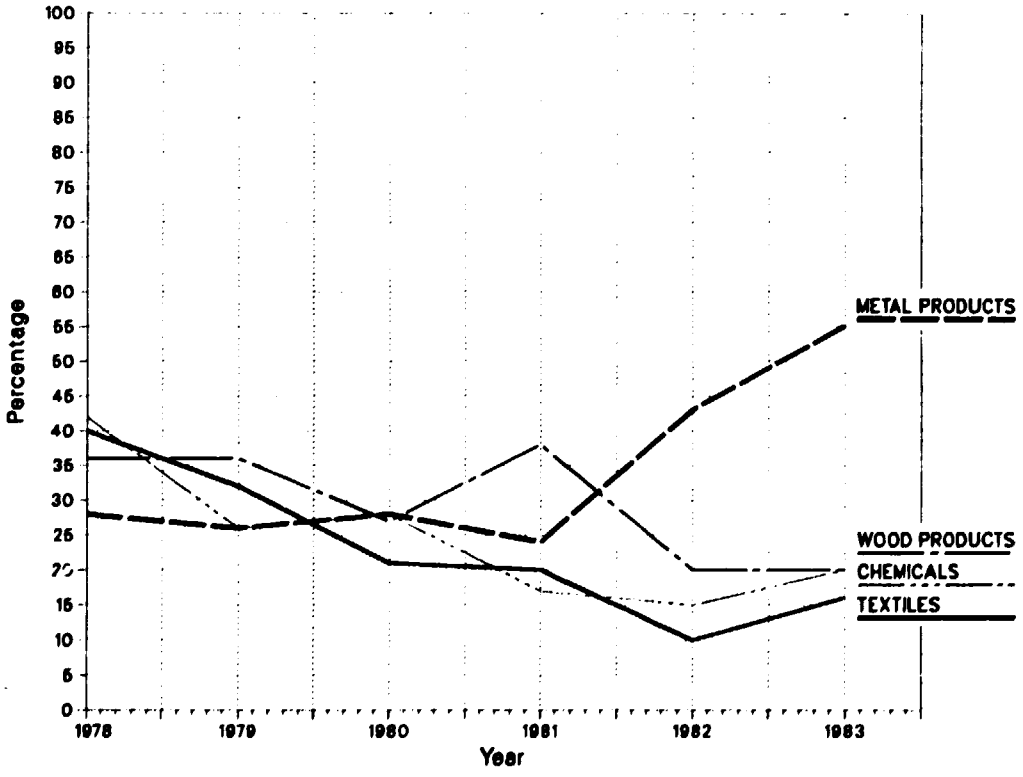
STRUCTURE OF MANUFACTURING EMPLOYMENT, 1962 AND 1982



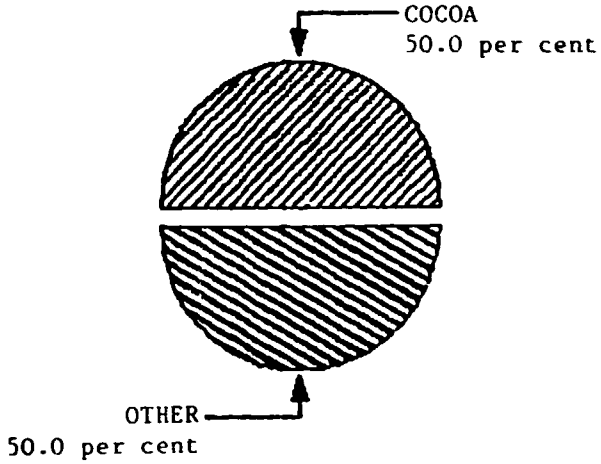
INDICES OF INDUSTRIAL PRODUCTION, SELECTED INDUSTRIES, 1977-84 (1977=100)



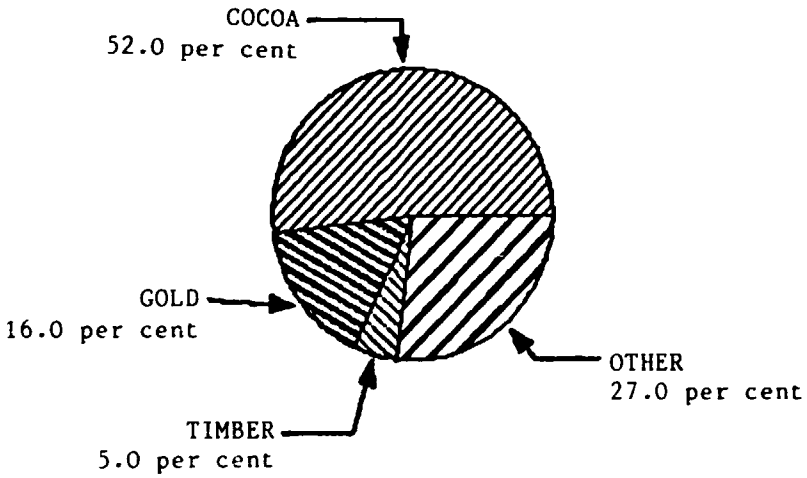
CAPACITY UTILIZATION RATES IN SELECTED INDUSTRIES, 1978-83



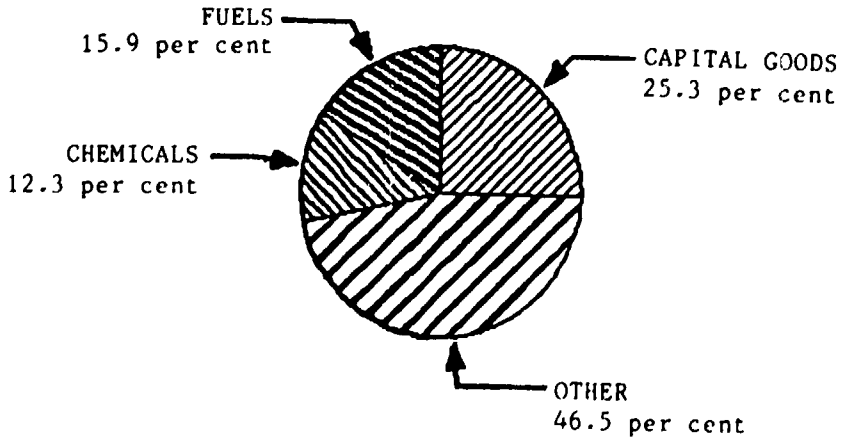
SHARE OF COCOA IN
TOTAL EXPORTS, 1986



COMPOSITION OF EXPORTS, 1985



COMPOSITION OF IMPORTS, 1985



2. STRUCTURE AND PERFORMANCE OF THE MANUFACTURING SECTOR

2.1 Growth and structural change[1/]

The growth performance of the manufacturing sector can broadly be divided into three distinct phases. Over the period 1962-70 both gross manufacturing output and MVA grew rapidly. The rate of growth of MVA was 13 per cent per annum during this period. Gross output tripled and labour productivity registered significant positive growth. In contrast, the period 1970-79 was one of stagnation. The index of manufacturing GDP stood at 92 in 1970 (1975 = 100). In 1977 it had increased to 98, but in four of these seven years, the rate of growth of MVA had been negative. During 1977-83 both manufacturing output and MVA declined sharply. The index of manufacturing gross output had fallen to 54 (1975 = 100) by 1982 and that of MVA to 48 by 1983.

As Table 3 shows, value added within the manufacturing sector has contracted on an annual basis during the last ten years, while employment has grown. Labour productivity (measured as value added at constant 1975 prices per employee) has therefore contracted at the annual rate of over 11 per cent over the period 1975-83 in most manufacturing branches. The only branches with positive MVA growth during this period were petroleum refineries and non-ferrous metals.[2/] The highest rates of negative MVA growth were experienced by machinery (electrical and non-electrical), transport equipment, other manufactures, textiles and weaving apparel. These trends are broadly confirmed by the output data presented in Tables A-1 and A-2, although direct comparison between data presented in Table 1 and Tables A-1 and A-2 is limited by significant differences in branch classification and the time period covered. It may be observed, however, that some branches - notably petroleum refineries - with positive value added growth - nevertheless themselves experienced a significant decline in production levels during the previous decade.

1/ Statistics cited in this section refer only to large- and medium-sized manufacturing establishments. Comparable estimates for the small-scale sector are not available.

2/ Glass products (ISIC 362) had a positive MVA per employee growth rate due to an annual decline of 23 per cent in employment. MVA also declined by an annual rate of 8 per cent in this branch.

Table 3. Indicators of industrial growth, by branch of manufacturing, 1975-84

(percentage)

Sub-sector of manufacturing (ISIC)	Growth of value added at 1980 prices 1975-84	Growth of employment 1975-84	Growth of value added per employee 1975-84
Food products (311)	-9.54[a/]	0.73	-10.91[a/]
Beverages (313)	-8.35[a/]	-1.85	-6.92[a/]
Tobacco (314)	-11.52[a/]	1.64	-13.98[a/]
Textiles (321)	-25.22[a/]	-4.42	-21.78[a/]
Wearing apparel, except footwear (322)	-25.22[a/]	-6.44	-19.54[a/]
Leather products (323)	-15.08[a/]	-8.05	-7.33[a/]
Footwear, except rubber or plastic (324)	-15.08[a/]	-9.80	-5.22[a/]
Wood products, except furniture (331)	-13.75[a/]	-3.00	-11.29[a/]
Furniture, except metal (332)	-13.75[a/]	-8.75	-4.88[a/]
Paper and products (341)	-24.94[a/]	-5.49	-20.55[a/]
Printing and publishing (342)	-5.06[a/]	-0.09	-5.54[a/]
Industrial chemicals (351)	-19.85[a/]	-2.34	-18.18[a/]
Other chemicals (352)	-19.85[a/]	-3.36	-17.28[a/]
Petroleum refineries (353)	11.87[b/]	2.49	6.92[b/]
Misc. petroleum and coal products (354)	...	...	...
Rubber products (355)	-19.85[a/]	-4.25	-16.38[a/]
Plastic products (356)	-21.15[a/]	-0.86	-21.15[a/]
Pottery, china, earthenware (361)	...	1.11	...
Glass and products (362)	-8.03[a/]	-23.00	23.22[a/]
Other non-metallic mineral products (369)	-13.51[b/]	-1.02	-13.65[b/]
Iron and steel (371)	-16.35[a/]	-6.51	-10.26[a/]
Non-ferrous metals (372)	4.41[b/]	0.29	3.01[b/]
Fabricated metal products (381)	-30.05[a/]	-3.71	-27.52[a/]
Machinery, except electrical (382)	-31.12[a/]	1.56	-32.20[a/]
Machinery, electrical (383)	-31.12[a/]	-4.86	-27.76[a/]
Transport equipment (384)	-21.15[a/]	-5.26	-16.84[a/]
Professional & scientific equipment (385)	-21.15[a/]	12.23	-32.07[a/]
Other manufactured products (390)	-21.15[a/]	-10.75	-11.43[a/]

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

a/ 1975-83.
b/ 1975-82.

Decline in production led to a rapid fall in capacity utilization rates in the Ghanaian manufacturing sector. Table 4 shows that capacity utilization rates declined throughout the 1970s and the early 1980s. By 1983 capacity utilization was well below 30 per cent, with textiles, wood processing, chemical and vehicle assembly (bicycles only) plants being most seriously affected. This very low level of capacity utilization reflects the severe dependence of Ghanaian manufacturing on imports. The foreign exchange crisis of the past few years has made it impossible to operate most manufacturing enterprises at optimum capacity. Current production levels are about 60 per cent of those achieved in 1970 and it is accepted by most analysts that most manufacturing enterprises would be "market-efficient" and financially viable if they operated at near full capacity level.[1/] The Government's attempts to raise capacity utilization rates have been only partially successful and capacity utilization "target rates" have had to be revised downwards in 1985 and 1986. Over the long run the problem of capacity underutilization can be adequately addressed by increasing the domestic linkages of the manufacturing sector. In order to achieve this, emphasis must be put on filling the gaps in the industrial production structure and strengthening inter- and intra-sectoral linkages by increasing the level of subcontracting and the rate of domestic resource use of the large- and medium-sized manufacturing enterprises in Ghana.

The structural imbalances within the Ghanaian manufacturing sector can be represented by two different types of estimates. Table 5 presents a branch distribution of MVA and manufacturing employment over the period 1962-82. The pattern of structural change over the period 1962-70 can broadly be described as normal (i.e. in line with the experiences of most developing countries).[2/] The share of food manufacturing in MVA declined by 13 percentage points and there was a rapid growth in the production of textiles, petroleum products and basic metal. By 1982 the trend had been reversed. Food manufacturing accounted for over 45 per cent of MVA, the share of textiles had fallen from

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1/ See e.g. World Bank, 5716-GH, op.cit.

2/ This concept has been widely discussed in the literature. See e.g. H. Chenery, "Patterns of Industrial Growth", American Economic Review, 1970, pp.69-93.

Table 4. Capacity utilization in Ghanaian large- and medium-scale manufacturing establishments, 1968/71-1983
(percentage)

	1968/71	1970/72	1975/77	1978	1979	1980	1981	1982	1983
Food processing	...	...	40	41	23	30	25	...	25
Tobacco & beverages	...	62	55	50	28	30	31	...	65
Textiles	64	78	86	40	32	21	20	10	16
Garments	58	40	47	38	25	30	24	20	25
Leather & products	...	56	46	31	31	21	26	18	26
Plastic products	...	40[a/]	33[a/]	11	15	17	23	20	35
Rubber products	79	...	36	22	18	16	20	27	22
Wood processing	...	...[b/]	...[b/]	36	36	27	38	20	20
Paper & printing	44[c/]	50	50	31	28	28	31	25	30
Chemicals	...	55	55	42	26	28	17	15	20
Pharmaceuticals	...	40	43	25	17	17	17	20	35
Cosmetics	...	44	27	33	27	8	15	15	20
Non-metallic mineral products	...	60	65	47	34	30	24	15	22
Metal products & engineering	...	35	32	28	26	28	24	43	55
Electrical appliance & supplies	...	(50)	29	32	31	18	19	37	44
Vehicle assembly	...	63	13	18	17	...	28	15	20[d/]
Miscellaneous	...	...	...	56	65	45	37	...	...
All manufacturing industries		52	43	40	33	26	25	21	30[e/]

Sources: 1968/71 - Management Development and Productivity Institute, Report of the Research Project on Utilization of Installed Capacity, Tables V and VI;

1970/72 and 1975/77 - Ministry of Industries, Report on a Survey into the Problem of Industrial Capacity Under-Utilization in Ghana (Nov. 20, 1978);

1978-83 - Central Bureau of Statistics, Quarterly Digest of Statistics, Vol. 1, No. 10, September, 1983; and Vol. 2, No. 11, June, 1984.

a/ Plastic pipe only.
b/ The focus in earlier studies was on under-utilization of capacity due to shortages of imported materials. No figures were provided for the timber and wood processing industries on the grounds that these industries were "regularly catered for with respect to import licenses".
c/ Paper and paperboard only. The figure for the furniture industry was 73 per cent.
d/ Bicycles only.
e/ Overestimate because firms not in operation are not included.

13 per cent of MVA in 1970 to 7 per cent in 1982 and the corresponding fall in the share of basic metal was from 12 per cent to 6.7 per cent. The fall in the share of the wood products industry was even more dramatic - from 34 per cent of MVA in 1962 to just 8 per cent by 1970 with no subsequent revival. The share of metal products in aggregate MVA was also halved during this period.

The pattern of structural change presented in Table 5 reflects two major weaknesses. First, Ghana has been unable to develop her resource-based industries. This is reflected in the decline of the wood processing branches and the stagnation of the non-metallic mineral products and the cocoa processing branches (Tables A-2 and A-3). The structural change that took

Table 5. Distribution of value added and employment by branch of industry, 1962-82[a/] (selected years)
(percentage of total manufacturing sector at current prices)

Industry	1962		1970		1979		1982	
	Value Added	Employment	Value Added	Employment	Value Added	Employment	Value Added	Employment
Food	4.8	6.2	9.7	9.1	11.6	13.2	9.6	13.3
Beverages	15.8	4.9	11.5	4.8	11.1	5.5	10.5	7.3
Tobacco	24.2	2.0	10.2	1.7	10.8	1.7	25.0	1.9
Subtotal	44.8	13.1	31.4	15.6	33.5	20.4	45.1	22.5
Textiles	0.2	0.6	12.7	19.4	10.6	20.4	7.0	16.8
Garments; leather; footwear	2.0	2.7	2.7	7.8	1.8	3.9	0.7	3.3
Wood products	33.8	58.4	7.9	25.4	7.4	21.6	8.2	22.5
Chemicals	6.8	4.8	7.2	7.2	8.2	8.8	6.0	8.4
Petroleum refining	-	-	12.2	0.7	14.3	0.7	15.0	0.9
Non-metallic mineral products	1.2	2.4	2.8	3.6	2.2	3.4	3.3	4.1
Basic metals	0.7	0.8	12.1	4.5	13.0	3.6	6.7	4.7
Metal & electrical products	4.0	3.0	3.9	5.7	3.8	6.3	3.3	5.6
Paper; transport equipment; other	6.5	14.3	7.2	10.0	5.2	11.0	4.7	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bureau of Statistics, Industrial Statistics (various years). Details may fail to add to totals because of rounding.

a/ Large- and medium-scale manufacturing establishments only, defined prior to 1973 as those engaging 20 or more workers and subsequently to include only firms engaging 30 or more workers.

place over the period 1965-80 was due to the expansion of the petroleum and chemical-based branches which were heavily dependent on increased imports.

Secondly, the decline of the basic metals and metal products branches since 1970 illustrates the fact that the Ghanaian manufacturing sector lacks depth. The development of the engineering and maintenance and repair industries is an essential component of a well integrated manufacturing sector. Without the development of the metal product and machine tool branches high levels of import dependence are inevitable and the level of domestic subcontracting by the large-scale manufacturing enterprises is bound to remain low.

The high level of import dependence prevailing in Ghana is evidenced by the fact that for a large number of products the ratio of import to apparent consumption is almost equal to 100. This category[1/] includes all metal

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1/ 1972-74 Refined sugar, particle board, wood pulp, sulphate and soda, wood pulp (dissolving), newsprint, other print, kraft paper, other paper, methanol, chlorine, sulphuric acid, zinc oxide, titanium oxide, lead oxides, ammonia, caustic soda, soda ash, hydrogen peroxide, calcium carbidel, vegetable tanning extract, nitrogeneous fertilizers, phosphatic fertilizers, potaric fertilizers, synthetic rubber, non-celluloric staple, regenerated cellulose, pig iron, wire rods, angles, plates (heavy), plates (medium), plates and sheets, railway tracks, wire, tubes (seamless), tubes (welded), copper bars, copper plates, copper tubes, aluminium tubes, refined lead, zinc plates, zinc unwrought, tin unwrought

Total products = 45

1981-83 Refined sugar, animal fats, wool yarn, cotton yarn, knitted fabric, non-wood pulp, wood pulp (dissolving), wood pulp (sulphate & soda), newsprint, other print, kraft paper, other paper, methanol, chlorine, sulphuric acid, zinc oxide, titanium oxide, lead oxide, amonio oxide, caustic soda, soda ash, vegetable tanning extract, nitrogeneous fertilizers, phosphatic fertilizers, synthetic rubber, non-celluloric staple and tar, regenerated cellulose, pig iron, wire rods, angles, plates (heavy), plates (medium), plates and sheets, template, railway tracks, wire (plain), tubes (seamless), tubes (welded), copper bars, copper plates, copper tubes, aluminium tubes, refined lead, zinc plates, tin (unwrought)

Total products = 45

products for which data is available, all mineral-based products except unwrought aluminium, all wood-based products except veneer sheets and particle boards, most chemicals except the products of the petroleum refinery in the 1981-83 list and many consumer goods. Moreover it must be stressed that this is an incomplete list as it does not provide any information about product in ISIC 8 or 9 consumed in Ghana. Most of these are likely to display very high ratios of import to apparent consumption.

The lists for the time period 1972-74 and 1981-83 are not strictly comparable due to differences in product coverage.[1/] Nevertheless it indicates that the only significant decrease in the import ratios that have occurred over this period is in the petroleum refinery-based products and in cement. Otherwise the two lists are broadly similar.[2/] The ratio of import to apparent consumption was less than 19 per cent for a narrow range of 8 products in 1972-74 and 14 products in 1981-83.[3/] There is a need to emphasize the growth of the resource-based branches - particularly cocoa products and wood manufactures - on the one hand and to start to fill the structural gaps within the manufacturing system by encouraging the growth of a machine tool and maintenance industry on the other. This can lead to an increase in domestic subcontracting, reduce import dependence and strengthen the linkages of manufacturing with the rest of the economy, particularly with

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1/ For many products relevant data is available for only one of the two periods.

2/ Note that there has been one "atypical" movement - the import to apparent consumption ratio of soap has fallen from category 5 to category 2 over this period.

3/ 1972-74 Wheat, raw sugar, beer, woven fabrics, footwear, veneer sheets, soap, aluminium (unwrought)

Total products = 8

1981-83 Raw sugar, cocoa products, cocoa butter, vegetable fats, woven fabrics, veneer sheets, particle boards, motor gasoline, kerosine, distillate fuel, residual fuel, liquified petroleum, aluminium (unwrought), beer

Total products = 14

the agricultural sector. This is essential for enhancing both the productivity and the efficiency of Ghanaian industry in the long run.

2.2 Performance and efficiency

It is widely accepted that productivity grew relatively modestly in Ghanaian manufacturing enterprises even during the period when growth rates of MVA were generally high.[1/] Over the period 1962-70 it has been estimated that whereas MVA (measured at constant 1962 prices) grew at an average annual rate of 13 per annum, manufacturing employment grew at about 10 per cent and there was a modest increase in sectoral productivity.[2/] Over the period 1970-77 (for which time series data are available see Table A-3) real manufacturing productivity[3/] grew at an annual average rate of about 3 per cent, but there were large productivity declines for three of the seven years included in this period. Since 1977 negative productivity growth has become the norm and as Table A-3 shows, the index of labour productivity had declined from 100 in 1977 to 57.1 in 1981. There is little evidence that these trends have been reversed in the past five years. Initial estimates show that value added per employee measured in current prices declined by over 12 per cent during 1982 within the manufacturing sector.[4/]

Table A-4 presents figures on net value added[5/] per person engaged in the different branches of Ghanaian manufacturing sector over the period

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1/ See e.g. K. Ewusi, Economic Development Planning in Ghana, New York Exposition Press, 1973, pp.75-91 and Leith P.C., Foreign Trade Regimes and Economic Development, Ghana, National Bureau of Economic Research, New York, 1974, pp.134-161.

2/ Central Bureau of Statistics, Statistical Handbook 1970, pp.14-16, 42.

3/ Defined as MVA per worker deflated by the manufacturing wholesale price index.

4/ Central Bureau of Statistics, Industrial Statistics 1979-82, Accra, 1984, pp.28-29.

5/ Net value added is defined as gross output less cost of (1) materials and fuels, (2) services and (3) fixed assets used up during the year. Industrial Statistics, 1979-82, p.3.

1980-82. It can be seen that there are wide variations in the productivity growth patterns. Table A-4 indicates negative productivity growth measured in real terms for both 1981 and 1982, although net value added per worker in money terms grew by about 28 per cent, and the manufacturing price index more rapidly.[1/] Nevertheless in some industrial branches - such as manufacture of confectionery (ISIC 3119), animal feeds (3112), soft drinks, rubber products (3559), plastic products (3560), non-metallic minerals (3699), fabricated metal products (3819), assembly of motor cars (3843) and manufacture of jewellery (3901) - productivity increased by between two to five times over the period 1979-82. In several other branches - including sugar products (3118), other food products[2/] (3121), footware (3260), chemical products (3529), tyres and tubes (3429), structural metal products (3815), agricultural machinery (3820), electrical appliances and supplies (3833 and 3839), ship repairs (3841) and manufacture of bicycles (3844) - productivity levels declined dramatically.[3/] There is thus a case for detailed disaggregated analysis to identify the potential for efficient industrial restructuring in Ghana.

Attempts at identifying differences in inter-branch productivity have often involved the estimation of production functions for the main industrial branches.[4/] Using time series data over the period 1970-84 a constant elasticity of substitution production function was estimated for 27 Ghanaian manufacturing branches. For seven of these branches - fabricated metals, non-metallic minerals, plastic products, industrial chemicals, beverages,

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1/ Table A-3 shows that the index of real labour productivity declined from 66 in 1980 to 57 in 1981 (1977 = 100).

2/ Excluding cocoa manufactures.

3/ There was negative value added, even measured in (domestic) current prices in sugar products and electrical appliances and productivity levels fell by more than half in all other cases.

4/ See e.g. J.S. Odama and U.S. Kazi, "Rate of Capital Labour Substitution in Time Series Production Function in Nigerian Manufacturing Industry 1962-1975", Nigerian Journal of Economic and Social Studies, Vol. 24, No. 1 (1982), pp.37-60; J.M. Katz, Production Functions, Foreign Investment and Growth, North Holland, Amsterdam, 1969; J.K. Maitha, "Production Functions in Manufacturing: Kenya", East African Economic Review, Vol. 5, (1963).

transport equipment and rubber - the elasticity of substitution estimate was significantly greater than unity. This compares favourably with results obtained for Nigeria for an earlier period. Where only 3 out of 19 branches were shown to exhibit high values for the elasticity of substitution parameters.[1/] However, for the large majority of cases the value of the elasticity of substitution coefficient was very low. Since there exists a strong correlation between the value of the substitution coefficient and labour productivity growth in the Ghana sample, the estimation of the sub-sectoral production functions provide some evidence of the relatively slow growth of labour productivity in the manufacturing sector.[2/]

Some estimates of the financial performance of the Ghanaian manufacturing sector are given in Table 6. The most striking feature of the Table is the very high level of gross profits[3/] and ratios of gross profit to value added. The mean gross profit to value added ratio for the period 1970-84 was as high as C.80 with a standard deviation of only 0.032. This is not significantly different from the estimate of the gross profit to value added ratio obtained for Nigerian manufacturing enterprises for the period 1970-80,[4/] but significantly below the average value for this ratio for a representative sample of developing countries during 1970-78 where the average value of the gross profits to value added ratio was 0.67 in 1970 and 0.66 in 1978.[5/] Evidence of relatively high profits can also be provided from firm level data and low rates of capacity utilization do not seem to have adversely affected financial profitability. This would indicate the existence of a

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1/ Odama and Kazi, op.cit., pp.50-52.

2/ These results are very tentative because of the small number of cases included in the sample. For a discussion of the limitations of the Constant Elasticity Substitution (CES) production function as an indicator of productivity trends, see Katz, op.cit., pp.19-31.

3/ Which are defined as value added less wage and salary payments and may therefore not be an accurate estimate of the net rate of return on investment.

4/ Mean = 0.8, standard deviation = 0.018, UNIDO, Industrial Development Review: Nigeria, UNIDO IS.557, 1985, p.19.

5/ UNIDO, Industry in a Changing World, New York, 1983, p.242.

Table 6. Financial performance of the Ghanaian manufacturing sector, 1970-84
(in thousands of Cedis)

	Gross profits	Gross profit / Wages	Gross profit / Value added	Gross profit / Employment
1970	152,023	3.34	0.77	2.63
1971	177,563	3.54	0.78	3.01
1972	211,345	3.65	0.88	3.48
1973	291,769	4.07	0.80	3.97
1974	336,692	3.79	0.79	4.59
1975	439,840	3.86	0.79	5.71
1976	714,588	4.84	0.82	8.02
1977	1,119,158	5.34	0.84	12.52
1978	1,036,852	3.58	0.78	12.07
1979	1,465,556	4.44	0.82	18.35
1980	2,055,336	4.38	0.81	25.60
1981	2,447,672	3.87	0.78	31.55
1982	2,484,780	3.48	0.77	36.72
1983	6,066,103	3.88	0.79	88.51
1984	7,871,000	3.72	0.79	119.76

Source: UNIDO data base.

relatively high level of monopolization of the large-scale manufacturing sector. Typically State corporations and joint ventures involving local and foreign partners are in a strong position to maintain market shares in the key product markets, and oligopolistic competition makes output contraction a realistic market strategy in many cases.

Table 6 also provides evidence of stagnant labour costs. The share of wages in value added has remained virtually unchanged at about 20 per cent throughout the period and gross profits per employee have risen from $2,630 to $119,760. Whereas a large proportion of this increase is undoubtedly due to inflation, employment has contracted significantly in recent years - from a peak of 89,935 in 1977 to 66,500 in 1985. It is generally argued that significant "overmanning" prevails in the Ghanaian manufacturing sector.[1/] However, over the period 1977-82 wages and salaries accounted for about 25 per

1/ The World Bank, 1985, op.cit., p.37.

cent of total cost incurred by Ghanaian manufacturing enterprises,[1/] whereas material imports have constituted about 54 per cent of total cost of manufacturing production.[2/] Reducing employment levels within the manufacturing sector cannot therefore be expected to have a major impact on enhancing profitability, particularly because unit wage costs have been declining in the recent past (see Appendix Table A-5). Reducing manufacturing employment has a very real economic cost which can be particularly inhibitive in the long run. The manufacturing sector is the main conduit for the transmission of scientific knowledge and technical skills to the labour force. A reduction in manufacturing employment is likely to lead to significant de-skilling throughout the economy increasing the vulnerability of the national economy to external shocks. The preservation of manufacturing skills must be an important concern of industrial policy-makers if this vulnerability is to be reduced.[3/]

Table 7 provides estimates of gross profitability at a disaggregated level. Whereas the average gross profits to value added ratio remained virtually constant over the period, the value added to gross output ratio increased for as many as 23 out of the 28 cases reported in Table 7. Given the very high gross profitability rate, this would indicate that the growth of industrial costs was not a major deterrent of industrial growth during this period. The fact that manufacturing production declined sharply - at the rate of over 11 per cent per annum for 20 of the 28 manufacturing branches (Table 3) - is to be explained with reference to two factors. First, all manufacturing firms were increasingly unable to convert their national currency surpluses into the foreign exchange necessary for financing

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1/ Calculated from Central Bureau of Statistics, Industrial Statistics, 1977-79, pp.22, 32-37; Industrial Statistics 1980-82, pp.30, 40-45.

2/ Moreover, the share of imports in total material costs of the manufacturing sector has gone up from 68 per cent in 1978 to 75 per cent in 1982. Central Bureau of Statistics, Industrial Statistics 1977-79, pp.38-39; Industrial Statistics 1980-82, pp.46-47.

3/ The share of manufacturing employment in total employment of establishments with more than 10 employees declined from 16.9 per cent in 1975 to 15.3 per cent in 1979. World Bank, Ghana Towards Structural Adjustment, 1985, Vol. 2, p.5. Estimates for later years are not available.

Table 7. Selected industrial indicators, by branch of manufacturing, 1975 and 1984
(at current prices, currency = Cedi)

Description (ISIC)	Value added per employee		Wages and salaries per employee		Share of value added in gross output (percentage)		Share of gross profit in value added (percentage)	
	1975	1984	1975	1984	1975	1984	1975	1984
Food products (311)	9,074	111,363	1,899	28,680	31.1	41.9	79.1	74.2
Beverages (313)	12,741	332,651	1,447	40,433	68.4	81.5	89.6	87.3
Tobacco (314)	64,589	1,556,441	4,091	49,930	74.7	86.7	93.7	96.8
Textiles (321)	3,988	64,153	1,457	28,166	35.3	55.7	65.5	56.1
Wearing apparel, except footwear (322)	2,514	53,906	793	18,554	38.0	64.6	68.5	65.6
Leather products (323)	2,405	50,037	703	14,723	43.9	59.9	79.8	70.6
Footwear, except rubber or plastic (324)	2,640	63,607	1,013	33,019	49.0	54.5	61.6	79.1
Wood products, except furniture (331)	2,771	50,515	1,109	24,293	51.4	53.9	60.0	51.9
Furniture, except metal (332)	3,089	60,321	1,001	20,920	55.1	59.9	67.6	63.3
Paper and products (341)	4,093	66,840	1,322	30,532	27.9	50.4	67.7	54.3
Printing and publishing (342)	3,051	45,547	1,094	23,937	59.0	65.7	64.1	47.4
Industrial chemicals (351)	7,404	133,431	1,494	46,710	45.7	68.4	79.8	65.0
Other chemicals (352)	6,874	135,659	1,359	31,085	36.0	58.4	80.2	77.1
Petroleum refineries (353)	112,800	2,684,568	7,967	101,004	28.8	32.3	92.9	96.2
Misc. petroleum and coal products (354)	...	...	...	...	...	...	...	...
Rubber products (355)	6,524	111,843	1,412	30,811	42.5	53.1	78.4	72.5
Plastic products (356)	8,368	114,188	1,021	22,328	61.4	57.6	87.8	81.4
Pottery, china, earthenware (361)	7,308	62,931	1,044	23,855	65.8	81.9	85.7	62.1
Glass and products (362)	3,294	44,400	1,660	29,664	56.0	25.6	49.6	33.2
Other non-metallic mineral products (369)	4,564	174,199	1,384	30,247	23.4	52.2	69.7	82.6
Iron and steel (371)	4,125	141,233	1,44	28,626	51.1	47.1	65.0	79.7
Non-ferrous metals (372)	33,005	393,395	3,211	122,622	71.5	53.3	92.3	68.8
Fabricated metal products (381)	6,198	97,314	1,562	29,196	47.6	55.5	74.8	70.8
Machinery, except electrical (382)	2,743	33,782	885	19,411	43.1	25.9	67.7	42.5
Machinery, electrical (383)	7,932	70,046	1,568	34,103	50.5	50.8	80.2	51.3
Transport equipment (384)	4,712	67,457	1,609	31,677	27.5	42.6	65.9	53.0
Professional & scientific equipment (385)	7,317	80,949	1,195	16,555	69.8	58.6	83.7	80.0
Other manufactured products (390)	2,902	77,374	827	20,382	57.8	62.4	71.5	73.7

Source: Statistics and Survey Unit, UNIDO. Based on data supplied by the UN Statistical Office, with estimates by the UNIDO Secretariat.

requisite industrial inputs. Secondly, the significant market power of public and foreign manufacturing firms has enabled them to pursue strategies of output contraction which do not affect market shares or significantly reduce profit rates. There is a need for a careful study of the extent of economic concentration in specific manufacturing branches and of the impact of this concentration on output levels and price structures within these sectors.

Manufacturing branches with the highest gross profit rates include petroleum refineries, beverages, tobacco, industrial chemicals, electrical machinery, scientific equipment, food products, other manufactures, rubber products and plastic products. The association between the rankings by the value added and gross output ratio is positive but weak,[1/] once again suggesting that high material costs did not significantly inhibit profit realization. Branches with high material cost (i.e. low value added to gross output) ratios which also had high gross profit ratio included petroleum refineries, food products, iron and steel and electrical machinery branches. Despite relatively high gross profit ratios, growth rates were strongly negative in these sectors, excepting petroleum refineries.[2/]

It is not possible to discern any systematic and stable relationship between the inter-branch dispersion of profitability and effective protection rates (EPRs). Ghana's protectionist structure has evolved in a relatively ad hoc and spontaneous manner and its impact may have been muted both by internal contradictions and external factors such as the extent of oligopolistic market structures. This is of course not to deny that the overall thrust of the protectionist system was to foster relatively high cost- import intensive- and domestic demand-oriented manufacturing enterprise.[3/]

1/ Spearman's rank correlation coefficient for 1975 = 0.27 and for 1984 = 0.25.

2/ Table 3 shows that value added declined at the rate of 9.54 per annum in the food products branch, 16.35 per cent in the steel industry and 31.12 per cent in electrical machinery over the period 1975-83. Value added grew at the rate of 6 per cent per annum in petroleum refineries during this period.

3/ A detailed comparison of profitability and effective protection rates is limited by the fact that the World Bank study cited does not report the EPR value by industrial branches.

The range of inter-branch dispersion of the gross profit rate is significantly narrower than the range of the dispersion of inter-branch EPRs estimated by the World Bank over the period 1967-83. According to these estimates, 49 per cent of industries had EPRs in excess of 100 per cent and 43 per cent of industries had EPRs greater than 400 per cent (resulting in negative value added at world prices) in 1972. In 1983, 37 per cent of the industries experienced negative EPRs (as against 17 per cent in 1972) and 16 per cent had EPRs in excess of 400 per cent.[1/] On the other hand, no industrial branch had a negative value for the gross profit to value added ratio. The value of this ratio ranged from 93.7 per cent to 49.6 per cent in 1975[2/] and from 96.8 per cent to 33.2 per cent in 1984.[3/] According to the World Bank, industries which have had the highest EPR value throughout the period include textiles, wearing apparel, glass, paints, tobacco, and footwear.[4/] According to Table 7 only tobacco had an exceptionally high gross profit rate during this period. Textiles and wearing apparel had average or below average profitability. On the other hand, the gross profit rate for glass was the lowest in both the 1975 and 1984 rankings.

High EPRs indicate that industrial efficiency is low and high gross profit rates reflect significant monopoly power enjoyed by market leaders. This power has largely been created by the industrial strategy which puts a premium on 'easy' import substitution. As the foreign exchange constraint tightened, opportunities for expanding manufacturing investment were reduced both because of the scarcity of imported inputs and because the high concentration of market power encouraged firms to pursue restrictionist strategies in the face of declining domestic demand. This generally meant that reinvestment rates within the manufacturing sector remained low and the sector became increasingly dependent on loan capital - particularly foreign loan capital - as a means for financing restructuring and rehabilitation programmes.

1/ World Bank, No. 5716-GH, 1985, op.cit., pp.50-52.

2/ Mean = 74.2 per cent, standard deviation = 12.58 per cent.

3/ Mean = 66.3 per cent, standard deviation = 15.71 per cent.

4/ World Bank, No. 5716-GH, op.cit., p.52.

2.3 Manufacturing trade and potential for resource-based industrialization

Manufacturing trade has remained relatively unimportant in Ghana since independence. During the 1960s and 1970s Ghana pursued an import-substituting industrialization strategy. This has meant that growth in most branches has remained domestic demand-oriented and export-output ratios have remained low.

Appendix Table A-6 shows that manufactured exports defined conventionally (i.e. as SITC 5-8 less 68) accounted for only 1.4 per cent of total Ghanaian exports in 1975. By 1981 this ratio had fallen to 0.06 per cent. According to the broader definition of manufacturing exports adopted by UNIDO, the share of such exports stood at 22.5 per cent in 1975 and at 39.9 per cent in 1981. The major additions in the UNIDO list are SITC 68 - non-ferrous metals and SITC 0723 - cocoa powder and cocoa paste. Together these two products accounted for 64.5 per cent of all manufactured exports in 1975 and for 74.2 per cent in 1981. The share of processed coffee exports declined substantially during this period. On the other hand the export of gold became increasingly important. The share of gold in total export doubled over this period - from about 8 per cent in 1975 to over 16 per cent in 1981.[1/] Other products with significant export contributions identified in the UNIDO list are petroleum products (SITC 332) and wood (both SITC 243 and SITC 63). However, the share of wood in manufactured exports showed a declining trend over 1975-81.

Appendix Table A-6 also presents information on the structure of manufactured imports. Manufactured imports defined conventionally (i.e. as SITC 8 less 68) constituted 66.6 per cent of total imports in 1975. This share fell to 53.1 per cent in 1981. A similar trend is apparent when we consider the UNIDO classification of manufactured imports. Table A-6 shows that the share of manufactured imports as classified by UNIDO declined from 78.0 per cent in 1975 to 65.0 per cent in 1981. Major manufactured imports include machinery and transport equipment and chemicals. A decline in the

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1/ Central Bureau of Statistics, Economic Survey 1982, March 1985, p.58.

relative share of manufactured imports reflects the general decline in investment activity in Ghana in the late 1970s.

Most manufactured imports are obtained from the developed market economy countries. The share of this group in Ghanaian manufacturing imports stood at about 78 per cent in 1981 - which was significantly higher than the share of the DMECs in total Ghanaian imports. The EEC countries are the major suppliers of manufactured imports to Ghana with a share exceeding 50 per cent of the total in 1981. The developing countries share in Ghanaian manufactured imports stood at about 17 per cent in 1981 - and there are indications that this share remained stagnant during most of the 1970s. However, developing countries are major sources of imports in the following product areas: coffee extracts (SITC 0713 mostly destined for re-exports after further processing), meat preparations (SITC 01), chemical elements and compounds (SITC 51), fish preparations (SITC 032), cotton (SITC 263), clothing (SITC 84), glazed rice (SITC 0422) and leather manufactures (SITC 61). There is considerable scope for increasing the range of manufactured imports from the developing countries. The share of the developing countries in Ghanaian intermediate and capital goods imports remains low. Imports from the DCs can also increase through increased regional co-operation within the framework of ECOWAS.

Regional economic co-operation can also play an effective role in stimulating the growth of manufactured exports from Ghana. As Appendix Table A-7 shows, Ghanaian manufactured exports to developing countries remain very limited. Four-fifths of manufactured exports from Ghana is destined for OECD markets - the United States being a major purchaser of gold products and food manu- factures, the EEC dominating the processed cocoa market and accounting for almost 90 per cent of Ghanaian exports of chemicals and 75 per cent of the exports of products in the machinery and transport equipment sector. The share of the developing countries is high in some chemical exports (such as dyeing material, essential oils, medicines), paper products, textiles and clothing, non-metallic minerals and some food manufactures. However, total Ghanaian exports in these product areas remain very low.

Ghana has generally been recognized as one of the richest West African countries in terms of her natural resource endowment. Sizeable deposits of

gold, diamond, bauxite and manganese exist in the country. However, as Table 8 shows, mineral production has declined during the late 1970s and early 1980s. The decline has been particularly marked in the case of diamond and bauxite. The production index for bauxite stood at just 19.2 and that for diamonds at 29.3 in 1982 (with 1975 = 100). Although decline in the production of gold has been less slow, the current level of gold production is fifty per cent lower than the 1972 production level. Production shortfalls are seen as the result of the breakdown in the supply of mining equipment, infrastructural constraints, skilled and unskilled labour shortages and inadequate access of the mining companies to foreign finance (largely a consequence of the gross over-valuation of the Cedi during the 1970s and the first half of the 1980s). The Government is currently laying particular emphasis on the rapid development of the mining sector. It is believed that the contribution of the mining industry to foreign exchange earnings can be significantly enhanced in the medium run.

Table 8. Mineral production, 1977-82

Mineral	Unit	1977	1978	1979	1980	1981	1982
Gold	Kg.	14,957.2	12,504.7	11,093.8	10,981.0	10,595.3	10,280.3
Diamond	Carats '000	1,946.6	1,422.9	1,225.5	1,149.3	836.5	684.2
Bauxite	Tonnes '000	279.2	327.9	235.3	223.1	181.3	63.5
Manganese	Tonnes '000	292.4	316.7	253.8	249.9	223.1	159.9

Source: Central Bureau of Statistics, Economic Survey 1982, Accord 1985, p.57.

Gold is the country's second largest foreign exchange earner after cocoa. Several projects are currently under way to reactivate abandoned mines and increase the level of prospecting. The Government hopes to attract substantial levels of foreign investment to the gold industry. Projects are also under way for increasing the productivity capacity of mines producing manganese and diamonds. As mineral production picks up there will be greater scope for increasing the level of processing and better integrating the development of the mineral and manufacturing sector.

Ghana also possesses abundant agricultural resources. Since 1984 agricultural production has been showing an upward trend as Table 9 illustrates. However, in only three cases - maize, rice and cassava - did production in 1985 surpass the 1980 level: agricultural recovery clearly has some way to go if it is to generate prospects for increasing the share of manufactured products in total. Wood products are also not constrained by the type of factors which limit cocoa processing.

The strategy of the ERP emphasizes the need for export diversification. Given the very low share of manufactures in total Ghanaian exports, export diversification must mean an increase in manufactured exports. Resource-based industrial development offers Ghana a chance for taking advantage of the country's comparative advantages in world, and particularly in regional, markets. Regional economic co-operation can pave the way for a significant co-ordinated expansion of manufactured exports throughout the ECOWAS region and Ghana stands to benefit significantly from such a regional co-ordination of national export strategies.

Table 9. Production of food crops, 1980-85
('000 metric tonnes)

	1980	1981	1982	1983	1984	1985
Maize	382	378	346	172	574	411.0
Rice	78	97	36	40	...	90
Millet	82	119	76	40	...	53.7
Sorghum	132	131	86	56	...	62.3
Cassava	2,322	2,065	2,470	1,729	4,083	3,076
Cooyan	643	631	628	720	...	580.8
Yam	650	591	588	866	...	485.4
Plantain	734	829	745	342	...	675.5

Source: Ministry of Agriculture.

2.4 Investment and ownership patterns

Table 10 shows that fixed domestic capital formation increased at an annual average rate of about 17 per cent over the period 1970-81 in nominal terms. According to these figures, major growth in domestic capital formation in manufacturing was concentrated in just three years - 1975, 1980 and 1981. The share of the wholly-owned State sector in manufacturing investment increased rapidly during 1971-77 - it more than doubled during this period - but then declined sharply over 1977-81.

A comparison of Appendix Table A-10 with data on the growth of manufacturing production (also measured in current prices) shows that the functional relationship between output and investment growth is positive and the incremental capital output ratio shows a rising tendency since 1979. Estimates are, however, liable to very large margins of error due to the unavailability of relevant price data. It is clear that in real (as against current price trends) terms investment levels have fallen significantly since the late 1970s. Although investment approvals have increased in recent years difficulties in obtaining import licenses have prevented firms which have obtained factory licenses from fully committing the approved funds. The level of investment actually undertaken is thus significantly below the level officially sanctioned by the Government.[1/]

Sector-wide estimates of the pattern of industrial financing are not available. As Table 11 shows, the State sector accounts for roughly half of the gross output and employment within manufacturing. Public investment is spread across a wide range of industrial branches - including textiles, transport assembly, chemicals, beverages, wood, metals and food manufacturing. Ghana Industrial Holding Corporation (GIHOC) groups 18 statutory corporations while 5 other holding corporations have been established to manage companies acquired by the Government from the private owners. Times series data on the rate of return are available only for the GIHOC group

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1/ Under Ghanaian law, investment in all new projects requires government approval. See World Bank, Report No. 5716-GH, op.cit., 1985, p.33.

Table 10. GIHOC: rate of return, 1978-83
(Million Cedis)

Item	1978			1979			1980			1981			1982			1983		
	Asset	Profit	Rate	Asset	Profit	Rate	Asset	Profit	Rate	Asset	Profit	Rate	Asset	Profit	Rate	Asset	Profit	Rate
Distilleries	11.90	1.40	11.76	13.30	1.50	11.28	16.20	3.00	18.52	21.50	5.50	25.00	24.00	2.40	10.00	21.05	-2.70	12.0
Marble works	-0.40	-0.40	-	-1.20	-0.80	-	-2.00	-0.80	-	2.40	-0.40	-16.70	-1.95	0.50	1.00	0.78	0.24	33.3
Fibre	4.60	-4.60	-100.00	0.30	-7.10	-2,366.70	-2.10	-2.40	-	7.60	9.70	127.60	7.20	-0.80	11.10	16.60	-5.06	-30.5
Brick and tiles	-1.60	-0.50	-	-2.10	-0.50	-	3.10	-1.00	-32.25	-4.20	-1.00	-	-5.10	-0.90	-	3.23	-0.94	-29.1
Cannery	9.10	2.50	27.50	18.60	10.90	58.60	26.30	8.60	32.70	37.50	11.70	30.87	54.76	17.30	31.50	76.83	3.19	4.2
Vegetable, oil mills	-1.00	-0.80	-	-2.20	-1.10	-	-2.60	-0.40	-	-3.90	-1.30	-	6.60	-2.90	-43.90	-	-	-
Electronics	6.30	2.90	46.03	5.40	-0.90	-16.67	4.60	-0.80	-17.40	6.10	1.60	26.20	6.00	-0.01	-0.20	10.04	-3.30	-48.0
Metal industry	2.70	0.50	18.50	3.40	0.70	20.59	6.10	2.80	45.90	10.70	4.70	43.90	13.60	3.00	22.05	20.44	3.70	18.1
Paints	6.10	-0.01	-0.17	8.80	2.70	30.68	8.20	-0.40	-4.88	12.50	4.50	36.00	12.00	-0.50	4.16	14.21	-1.06	-0.1
Boatyard	3.30	-0.20	-6.06	4.50	-1.30	-28.89	3.00	0.60	20.00	3.60	0.60	16.70	1.60	-1.30	-81.25	21.30	3.40	16.0
Footwear	1.60	-0.60	-37.50	-0.70	-2.20	-	-0.20	0.30	-	0.30	0.50	166.60	-1.37	-1.70	-	2.79	-6.40	-229.4
Meat products	-0.60	0.30	-	2.20	2.30	104.54	2.60	0.40	15.38	4.40	-0.30	-6.80	2.60	0.50	19.20	-	-	-
Paper conversion	15.00	4.60	30.67	15.10	0.10	0.66	14.60	-0.30	-2.05	17.00	2.50	14.70	15.10	-1.50	9.90	-	-	-
Pharmaceuticals	21.90	8.00	36.50	30.60	9.00	-	44.50	12.80	28.76	59.70	15.30	25.60	65.40	5.60	8.56	92.49	19.17	20.7
Glass	5.40	-	-	14.60	-	29.41	14.80	-	-	16.60	-	-	16.30	-	-	-16.05	-	-
Steelworks	6.90	-8.50	-	6.40	1.00	-	6.50	-0.03	-	7.30	0.90	12.33	4.00	-3.00	-75.00	23.80	-	78.5

Source: GIHOC.

Table 11. Ownership structure in the Ghanaian manufacturing sector, 1962, 1978 and 1982 (percentage)[a/]

	Distribution of gross output			Distribution of employment	
	1962	1978	1982	1962	1982
Wholly State owned	11.8	33.1	33.4	24.3	28.1
Joint State-foreign	7.1	20.4	15.9	2.9	23.6
Joint private-foreign	4.8	26.1	25.5	3.9	22.4
Wholly private-foreign	63.2	8.4	8.6	56.5	5.6
Wholly domestic private owned	13.0	12.0	16.7	12.3	20.3

Source: World Bank, Report No. P-4217-GH, 1986, Annex 5, p.40.

a/ Figures do not add up to hundred because of rounding.

(Table 10). The group has earned net positive rates of return consistently since 1978 despite falling levels of capacity utilization. The main profit earners were the distillery, the cannery, pharmaceuticals and paper conversion units. The marble works and metal products units have also enjoyed positive rates of return since 1981. Of this group of successful public enterprises only the beverage producing units benefitted from relatively high rates of effective protection. There is some evidence therefore that public sector management has been effective and efficient in the past decade.

However, even in 1981 when the gross profits of the GIHOC group were at an all time high level of ₵ 54 million they represented only about 25 per cent of gross domestic capital formation in the wholly State-owned manufacturing sector. It is therefore clear that most public sector manufacturing investment has been financed by budgetary resources. The Government has in recent years relied on foreign finance as a source of industrial investment - credit worth $53.5 million has been obtained in 1986 to permit an expansion of industrial imports and to facilitate industrial sector rehabilitation. However, as Table 12 shows, the share of the manufacturing sector in outstanding Ghanaian debt was significantly less than that in most other West African countries.[1/]

1/ The figures should, however, be interpreted with caution as it is not possible to indicate the extent to which manufacturing benefitted from loans to the "infrastructures" and "others".

Table 12. Sectoral distribution of public debt[a/] of selected West African countries, 1983
(percentage)

	Agriculture	Mining	Manufacturing	Infrastructure	Services[b/]	Community[b/]	Other[c/]
Benin	5	1	50	23	1	12	8
Burkina	19	4	3	31	3	29	11
Cameroon	9	2	20	41	1	28	3
Côte d'Ivoire	16	2	8	39	40	30	2
Ghana	9	...	7	43	3	11	29
Liberia	16	3	3	36	4	19	19
Nigeria	5	...	34	31	5	21	19
Sierra Leone	19	3	6	36	3	20	13
Togo	7	5	12	31	2	9	35

Source: "Industry and External Debt in Africa", Industry and Development, No. 17, UNIDO, Vienna, 1986, pp.11-12.

a/ Outstanding (including both disbursed and undisbursed) at end of 1982.
b/ Including social and personal services.
c/ Including contributions to finance current imports, contributions not directly for imports, other contributions, debt reorganizations, military pension payments and other unclassified debt.

Investment by wholly owned State enterprises within the manufacturing sector constituted about 20 per cent of total fixed investment. No systematic information is available about the pattern of financing of joint venture, domestic private sector firms and foreign corporations. Private sector manufacturing investment has tended to grow more rapidly in recent years - its share in gross domestic fixed capital formation increased from 51 per cent in 1977 to 58 per cent in 1981 - and it has reportedly earned a significantly higher rate of return than public firms. However, it has also been maintained that the rate of retention of large- and medium-sized private sector firms is low mainly because of the low capacity utilization rates and the existence of a significant level of economic concentration within the manufacturing sector.[1/] Increasing manufacturing investment for modernization and

1/ See Yao Graham, "The Political Crisis in Ghana", Review of African Political Economy, No. 34, December 1985, pp.54-67.

rehabilitation requires the creation of a system of incentives and regulation which leads to a substantial increase in the self financing ratio within the manufacturing sector. This objective could also be achieved through a system of checks on capital transfers, without creating disincentives, particularly from the foreign enterprises which retain a dominant position within the Ghanaian manufacturing.[1/]

Since 1983 the Government has outlined an investment strategy which limits the growth of public sector firms within manufacturing. The role of the public sector remains large, however. The domestic private sector firms have benefitted from the indiginisation attempts undertaken in the 1970s. The investment policy Decree of 1975 required foreign firms to sell 40 to 60 per cent of their shares to Ghanaian nationals or to the State. In the 1981 Investment Code the following industries were reserved for the Ghanaian private sector: baking, foam products, cement blocs, garments, tie dyeing, tyre retreading and travel bags. This list illustrates the nature of domestic private sector enterprise in Ghana. Such firms are small in size and deploy a labour-intensive production technology. Joint ventures established by the Ghanaian private sector and foreign firms are much larger and as modern as the State-owned firms. The share of the private sector joint venture firms in MVA in 1982 was 32 per cent - larger than that of wholly State-owned units, joint ventures within the State sector or private Ghanaian firms. The Government's recent emphasis on privatization is likely to further increase the role of the joint venture in Ghanaian manufacturing. Such joint ventures may substitute for public firms in the large- and medium-scale manufacturing sector. Wholly-owned private firms cannot be expected to play this role. They will remain confined mainly to small-scale production. They can, however, make a significant contribution towards enhancing manufacturing employment and strengthening the linkages of the manufacturing sector with the rest of the national economy.

1/ Table 11 shows that foreign firms maintain a presence in industrial units producing 50 per cent of gross value added in the manufacturing sector. Usually their position within such units is a dominant one. They are responsible for foreign financing, technical management and production design.

2.5 Small-scale industry and the regional distribution of manufacturing output

Rapid growth of small-scale manufacturing enterprise is a priority policy objective of the Government. The share of small-scale enterprises (defined by the Government as firms employing less than 30 persons) in manufacturing employment rose from 78 per cent in 1960 to 85 per cent in 1973.[1/] Later figures are not available but as Table A-11 shows, the number of registration of small-scale enterprises has increased significantly in recent years. During 1976-80 only 524 small-scale factories were registered. The number of registrations approximately doubled during 1981-82.[2/] On the other hand, the registration of large- and medium-sized manufacturing establishments declined from 87 in 1974 to 40 in 1982.[3/] The share of the small-scale sector in MVA was estimated at about 25 per cent in 1973.[4/] It is believed that the small-scale sector has suffered less from the present recession than the large- and medium-sized enterprises because the production technology employed by the latter is less import dependent. However, no firm estimates of the share of the small-scale sector in gross output, MVA or manufacturing employment are available for recent years.

In the late 1970s small enterprises depended primarily on the agricultural sector and on informal rural credit markets for their capital outlays. Access to bank credit was severely restricted. Similarly the large-scale manufacturing enterprises were not a major source for obtaining training or production technology - only 2 per cent of the surveyed small-scale entrepreneurs had received prior training in large mnaufacturing establishments. Direct purchases from the organized manufacturing sector represented only 22 per cent of the total purchases of the small-scale

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1/ Cheecki and Company, Small-scale Industry Development in Ghana, April 1976, p.19.

2/ Central Bureau of Statistics, Economic Survey 1982, Accra, March 1985, p.73.

3/ Ibid., p.74.

4/ Steel, W.M., Small-scale Employment and Production in Ghana, New York, Praeger, 1977.

enterprises - reflecting their inability to buy in bulk and hence their strong dependence on middlemen. The share of the large-scale manufacturing enterprises in the total sales of the surveyed firms was even smaller. The small-scale enterprises produce very few intermediate goods and cater mainly for the local market in simple consumer goods - bakery products, wearing apparel, wood and metal products, etc. Repair services are severely restricted. Linkages among firms within the small-scale sector were weak and the level of subcontracting was very low. Finally, it was found that the scope for expanding employment remained small - there was no tendency for firm size to increase over time or for entrepreneurs to "graduate" from the small- to the medium-sized formal sector.

These findings would suggest that major changes are required to restructure the small-scale manufacturing sector to significantly augment its developmental impact. A strengthening of small-scale enterprises can also play an important role in improving the pattern of regional distribution of manufacturing enterprise in Ghana. As shown in Table 13 manufacturing industries are concentrated in the Greater Accra area and to a lesser extent in Takoradi and Kumasi. Accra accounts for over 50 per cent of manufacturing employment and about 60 per cent of value added; the Western Region for about 14 per cent and 20 per cent; the Ashanti Region, 15 per cent and 10 per cent; and the Eastern Region, 10 per cent and 3 per cent, respectively. The rest is shared between the Central, Volta, Brong-Ahafo, Northern and Upper regions. Table 13 illustrates that there is no overall tendency for the concentration of manufacturing industry to be reduced over time. Underdeveloped rural infrastructure and weak transport linkages have inhibited a transfer of industrial units to rural areas. Ready access to the principal market for manufactured products and proximity to the port of Tema and transportation and communication facilities are clear advantages for locating in the Greater Accra area. Manufacturers also prefer to be near government offices with which they must constantly deal, for example, in connection with import licensing and price approvals. The Government has however offered a wide range of incentives for the location of manufacturing enterprises in the rural areas. The scope for achieving a wider regional spread of manufacturing activity is greatest in the resource processing branches which need to be based near sources of supply. Prospects for the development of some such branches, textiles, food processing and wood products branches, are examined in the next section.

Table 13. Geographical location of manufacturing activity, 1977, 1981 and 1983
(percentage)

Region	Employment			Value Added		
	1977	1981	1983 (Est.)	1977	1981	1983 (Est.)
Western	13.6	12.7	14.0	16.0	24.8	26.8
Central	2.4	2.1	2.1	1.1	0.4	0.4
Accra	51.7	51.9	50.5	64.0	60.0	58.0
Eastern	10.0	11.0	11.5	2.9	2.2	2.4
Volta	2.5	2.8	3.0	0.6	0.6	0.6
Ashanti	15.8	15.7	15.8	12.6	10.2	10.5
Brong-Ahafo	2.8	2.8	2.2	0.5	0.4	0.4
Northern	0.9	0.7	0.7	2.0	0.6	0.6
Upper	0.3	0.2	0.2	0.1	0.3	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0

Source: Central Bureau of Statistics, Industrial Statistics (various years).

2.6 Problems and prospects of the textiles, food processing, capital goods and wood product branches

A. Textiles

The textiles and garments industry currently account for about 8 per cent of MVA and 20 per cent of manufacturing employment. In 1970 its MVA share had been 15 per cent and it had accounted for about 27 per cent of total manufacturing employment. In 1970 the capacity utilization rate was 60 per cent. By 1982 this had declined to 10 per cent for the textile and 20 per cent for the garments sub-sector. As Table 4 shows, no other branch had a lower capacity utilization rate in that year. UNIDO estimates that the textile and garments industry has a present production capacity (i.e. without any rehabilitation of plant or equipment) of 1.66 kg per capita. Per capita textile consumption stood at 2.95 kg in 1977 - declining to about 1.44 kg per capita by 1980. As income levels rise there is thus significant scope for expanding textile production in Ghana.[1/]

1/ UNIDO, Assistance in Plan Preparation for the Textile Sub-Sector, DP/ID/SER.A.687, 17-3-1985, p.8.

Sub-sectoral rehabilitation needs are not very urgent. The layout of most factories is generally well planned providing a reasonable flow of material. Most of the equipment was bought between 1964-67 and 1976-79. In Europe, the older part of the equipment would have been replaced because of its high labour intensity. In Ghana with its much lower cost of manpower a replacement of equipment for this purpose is not yet necessary. For technical reasons there is no need for an immediate replacement either. There is enough machinery which can run economically for at least another 3 years without rehabilitation.

The textile industry has been - and will continue to be - mainly domestic demand-oriented. This is because productivity within the industry is low particularly in comparison with international competitors. The UNIDO study found that textiles manufactures in Ghana were not particularly concerned about stimulating productivity growth within their enterprises and worker incentive schemes were operated by a very small proportion of the surveyed firms.[1/] The quality of products is therefore very low. In the woven fabrics sub-sector, 20 defects per 100 metres is considered normal. This compares with a defect rate of 5 per cent in "first quality" textile export markets. Improving productivity within the sub-sector and the quality of its products will involve significant capital outlays. Replacement requirements during the period 1986-88 have been estimated at $240 million - assuming no rehabilitation of existing non-operational plants.[2/] Replacement costs will assume increasing significance in coming years. Provisions for depreciations are well below actual replacement requirements. For three firms surveyed - Freedom, Tema Textiles and GTMC - it was calculated that depreciation provisions in 1984 represented only about 50 per cent of estimated replacement requirements.

Another source of increasing costs is raw material and chemical inputs. Together they account for about 60 per cent of the total variable costs of the firms in this industry. Most inputs are imported from abroad. Ghana does not

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1/ UNIDO, ibid., p.13.

2/ UNIDO, ibid., p.16.

produce lint cotton in significant amounts nor are chemicals and dyestuffs domestically produced at a level required by the textile industry. The import dependence of this industry is thus high.

With the existing scarcity of foreign exchange Ghana is not in a position of a strong and potent buyer. It normally cannot choose the optimal moment of purchasing and therefore sometimes has to pay a higher price. Moreover the import licensing system operative in Ghana puts premium on a quick use of licences obtained. Purchases are therefore made in a hurry and in bulk regardless of market trends. Improvements in the licensing system can thus go some way in moderating import price increase.

Manufacturers also argue that the structure of taxation discriminates against them and has stimulated the trade of dealers in second hand products. More equitable tax treatment - by levying tax not on value of products but on their weight - could improve competitiveness within the textile and garments industry. This would accelerate productivity growth and lead to an improvement in product quality. Closer monitoring of productivity differentials among manufacturers by existing institutes such as the Management Development and Productivity Institute and the Standards Board and the Export Promotion Council is also required.

The development of the textiles and garments industry depends crucially on increasing capacity utilization rates. Rehabilitation requirements are not high - although replacement costs will tend to rise over time and the UNIDO survey shows that they are at present inadequately provided for. Significant modernization expenditure will be required if the industry is expected to generate significant export earnings. This is because of the poor quality of textile products. Increasing export orientation must therefore be seen as a long-term objective. In the meantime - the next 3 years - capacity utilization rates can be raised by capturing some of the increase in per capita consumption of textile products (which are closely associated with rising income levels) for the domestic producers. Whereas the import to apparent consumption ratio of woven fabrics is low, that for yarn currently approaches 100 per cent. Priority ought to be given to expanding yarn production significantly in the period 1986-88. This is a key feature of the UNIDO proposal for Ghana's textile and garments industry which shows that

increasing production capacity to about 30 per cent by 1988 would allow the textile sector to generate substantial profits after providing for replacement costs. Total expenditure required to achieve this level of production is estimated at $105.6 million.

B. Food processing

The share of the food processing (excluding beverages) branches in MVA increased from 4.6 per cent in 1962 to 11.6 per cent in 1979, but declined to 9.6 per cent by 1982. The employment share has doubled (from 6.2 per cent to 13.3 per cent) over 1962-82 and whereas the output share has contracted since 1979, the employment share has remained constant. Factor productivity has declined during the recession and capacity utilization rates have fallen from about 40 per cent in 1975 to only 25 per cent today.

Food processing enterprises include meal processing units, dairies, a cannery, fish processors, producers of vegetable, grain and animal oils and fats, bakeries, sugar refineries and producers of cocoa products. There are 4 statutory (State-owned) corporations within this sector under GIHOC. The cannery has operated profitably over a long period. Sizeable profits have been made throughout 1970-83. The meat and vegetable producing units have generally tended to produce large financial losses.

Dairies, bakeries and grain oil producers are mainly domestic market-oriented. Cocoa processing on the other hand - which accounts for about 25 per cent of the total employment of the food processing sector and for about 22 per cent of its gross value added[1/] - is a major export-oriented industry. The share of processed cocoa products in total exports has been halved from about 9 per cent in the mid-1970s to about 4 per cent today. Cocoa butter is the single most important cocoa product exported. During the period 1980-83, however, it accounted for only about 6 per cent of total export earnings generated by the cocoa industry.

1/ Calculated from Central Bureau of Statistics, Industrial Statistics, 1980-82, pp.20-21, 26-27.

There are important international market constraints on the growth of processed exports from developing countries - including Ghana. Clearly Ghana has a relative advantage in the production of cocoa butter (than in cocoa cake) which can be produced by the less capital- and technology-intensive expeller technique (and which sells at roughly the same price as cocoa butter produced by the processing technique). The expeller technique cannot be used however for the production of cocoa powder, world demand for which has been increasing since the late 1950s. Demand for cocoa butter on the other hand has been depressed because of the rapid introduction of cocoa substitutes. It has been estimated that over the period 1965-80 fat substitutes alone were equal to about 18 per cent of world cocoa production. Many developed countries - such as the United States and the United Kingdom - do not insist on maintaining a prescribed cocoa content of chocolate which has contributed to a depression of the world demand for cocoa butter.[1/] Despite the renewal of the International Cocoa Agreement in July 1986 cocoa prices are expected to continue to decline as "a diet conscious Europe and America reduce the demand for chocolate".[2/]

Moreover, the international processed cocoa market has been described as "non-competitive (with) substantial information monopolies".[3/] This means that price ratios faced by manufacturers in developing countries are different from those faced by developed country manufacturers. The structure of the markets and the pattern of price additions at different stages in the marketing process ensures that the manufacturing of cocoa butter (rather than cocoa powder) remains a relatively profitable enterprise in the short run for Ghana, Nigeria and Côte d'Ivoire, despite the secular decline in demand. Cohen has shown that price distortion in the world cocoa processing market discriminates against the location of manufacturing units which provided high value added cocoa products in developing countries.[4/] The dealers in the

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1/ S.J. Cohen, "Product Prices and Technological Choice: The Case of the International Cocoa Processing Industry", Journal of Development Studies, April 1986, pp.574-576.

2/ The Economist, July 28, 1986, p.13.

3/ Cohen, op.cit., p.579.

4/ Cohen, ibid., pp.579-581.

international markets bear a significantly higher cost for handling cocoa butter or cocoa powder than cocoa beans. They are therefore reluctant importers. As against this dealers' margins on cocoa powder are higher than on cocoa butter. Developing countries thus have an incentive to export cocoa butter. Tariff structures in developed countries also discriminate against advanced stage of processing in the cocoa industry. It would thus appear that significant expansion of cocoa processed exports from Ghana is unlikely - the demand for cocoa butter is stagnant and international price distortions make a switching from cocoa butter to cocoa powder, or other higher value added products, unprofitable in the short run.

External constraints are not the only cause of export stagnation. Export of cocoa (in both processed and raw form) declined substantially during the 1970s despite marked improvements in world cocoa prices during this period.[1/] Domestic cocoa production declined due to worsening producer prices and stimulation of these prices has led to rapid growth in cocoa production. But the share of processed cocoa bean exports has not shown a consistent trend in recent years. This means that the provision of export incentives are by themselves not sufficient to stimulate the growth of the cocoa processing industry. The cocoa processing industry may indeed find the supply of beans falling as the inducement to export increases. Improving the availability of raw material supplies remains the single most important step that must be taken to stimulate the growth of the food processing industries. In December 1986, the Arah Bank for Economic Development in Africa approved a loan totalling $4.9 million to finance the rehabilitation of the Tema Food Complex.

C. Capital goods

Ghana is one of the most important African countries as far as the development of the capital goods industry is concerned.[2/] Immediately after

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1/ For details, see F. Teal, "The Foreign Exchange Regime and Growth: A Comparison of Ghana and the Ivory Coast", African Affairs, Vol. 55, No. 339, June 1986, p.277.

2/ For evidence on the relative importance of the capital goods sector in sub-Saharan African economies, see UNIDO, The Capital Goods Sector in Africa: A General Review, UNIDO/IS.502, 1984, pp.30-42.

independence the Government took the decision to develop a widely diversified industrial sector and actively sought to stimulate the growth of the capital goods producing branches.[1/] The heavy industrial branches[2/] (excluding transport assembly) accounted for 6.9 per cent of MVA and 6.2 per cent of manufacturing employment in 1962. The MVA share had risen to 18.8 per cent and the employment share to 13.8 per cent by 1970. Over the period 1979-84 there had been a significant contraction of the capital goods sector. The share of the capital goods producing branches in MVA declined from 19 per cent to about 13 per cent over this period. The level of capacity utilization declined drastically in the non-metallic minerals branch over this period - from 34 per cent in 1979 to about 20 per cent in 1984.

Capacity utilization has not shrunk so rapidly in the metal products and engineering branches because firm size remains relatively small. In a survey of the capital goods sector conducted by the ILO in 1982 it was found that over 90 per cent of the firms each employed less than 30 persons and could thus be classified as a small-scale enterprise.[3/] In the metal industry average employment provided was only 16 persons per firm. Most locally owned firms begin operations as repair and maintenance workshops but gradually develop skills to produce simple agricultural implements. Some firms are also capable of producing components of machinery employed by the food processing industry. The production of general-purpose machines and tools, such as lathes, planers and boring machines does not take place locally and the more specialized high speed machine tools - turret lathes, milling machines, precision grinders - are all imported and none of the local firms appear to be capable of producing these machines. In other words, the technology and skill for the production of these machines which are in great demand have not been developed.

1/ The rationale underlying this strategy is outlined in T.H. Green, Reflections on Economic Strategy: Ghana and the Ivory Coast 1957-67 and in P. Foster and A. Zolberg, Ghana and the Ivory Coast: Perspectives on Modernisation, University of Chicago Press, 1971, pp.217-243.

2/ Non-metallic minerals, basic metals and electrical and non-electrical machinery.

3/ A. Abougaye, Technology and Employment in the Capital Good Sector in Ghana, ILO, WEP 2-22/WP82, Geneva, 1982.

Products locally manufactured include hoes and digging hooks, ploughs (both bullock and disc), four-wheel carts, coal pots, flour mixers, corn mills, cassava graters, palm oil machines, nuts and bolts, car parts and cement block machines.[1/] In common with other African countries this would indicate that the differentiation between the metal processing and machine producing sectors is low. Firms simultaneously engage in both types of activities and barriers to entry within the industry are very few due to cheap labour and material costs (including the widespread use of scrap material) and simple production designs.

The technological capability of the capital goods sector is limited. However, the ILO survey found evidence of attempts by local manufacturers to imitate imported technology. Flour mixers have been manufactured by copying imported production technologies. The use of scrap metal is widely prevalent in the metal manufacturing branches. Small-scale enterprises are particularly adept at improving suitable production technologies and substituting domestic inputs for imports.

Blacksmiths continue to play a particularly important role in the capital goods sector by the provision of agricultural implements and tools. Although these producers have at times come under heavy pressures, they have a potentially important role to play. However, very little attention has been given to that part of the informal sector in African countries devoted to the production of capital goods. An exception is the study done by Hakam[2/] for the ILO on the diffusion of technology from the formal to the informal sectors in the case of auto-repair in Ghana.

The capital goods sector also contains large-scale manufacturing enterprises. GIHOC companies in the metal products, electronics and glass industries have produced positive net profits in most normal years. There are also several joint ventures in the sector and some reports indicate that new investment for the manufacture of soap scent is being undertaken on a sizeable

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1/ Abougaye, ibid., p.34.

2/ A. Hakam, Technology diffusion from the Formal to the Informal Sector: the Case of Auto-Repair in Ghana, Geneva, ILO 1978.

basis. Large-scale firms within the sector suffer from foreign exchange shortages leading to the growth of capacity underutilization. The shortage of skills and know-how constitutes a further important constraint on the growth and quality improvement of output, as does the shortage of raw materials, intermediates and machinery inputs even though, as has been seen, adaptations to local availabilities do take place. In very few large-scale capital goods producing firms is R+D undertaken as a specialized activity and very few firms have design divisions. Lastly, the lack of standardization is also a major problem in this sector.

From some of the evidence emerging from firm-level surveys of the capital goods sector in Ghana it is clear that there exists both strengths and weaknesses. The weaknesses, it is probably fair to admit, are perhaps more evident than the strengths. To begin with, the production of machinery is still very limited and where it does exist the production capabilities and product qualities are relatively unsophisticated. Metal processing tends to be a more important activity in Ghana than machine production. Nevertheless, although not as evident as the weaknesses, there also are strengths in this sector which could form a basis for enhancing the capability to produce, modify and adapt capital goods.

D. Wood industry

The share of the wood industry in MVA declined from 33.9 per cent in 1962 to 8.2 per cent in 1982 - the employment share has fallen from 59 per cent to 22 per cent over this period. Capacity utilization has declined from 36 per cent in 1978[1/] to less than 20 per cent in 1983. In the mid-1970s wood products were the second largest source of export revenue - their share has fallen steadily over the years and currently stands at about 5 per cent. The 1983 production level of 0.1 million cm^3 and export earnings of $11 million show a marked decline of the wood industry, when compared with its peak production level of 2 million cm^3 and export earnings of $130 million in 1973. Inadequate foreign exchange for capital replacement, lack of working

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1/ Earlier figures are not provided by the Central Statistical Bureau.

capital, loss of technical personnel, lack of export price incentive and inadequate infrastructural facilities seem to have caused a drastic fall in activities in the wood industry.

There are well over 250 active logging and wood processing companies which produce a full range of products for both local and export consumption. Products range from logs to lumber, plywood, sliced veneer, rotary veneer, chipboard, blockboard, finger and parquet flooring, solid and flush doors, furniture parts, knocked down furniture, finished furniture and a full range of mouldings. Of the 250 companies in the industry, seven are either state-owned or parastatal. There are also several small-scale millers, owning either a mobile bank mill or a stationary two cut or horizontal mill or modified chain saw mills. There are also small-scale woodwork/carpentary shops feeding the local market and employing on the average 1 to 10 men each.

The wood industry in Ghana has developed an integrated structure capable of producing 2.5 million cm^3 of round logs per annum of which 1.6 million cm^3 can be absorbed into production of lumber and other wood products. However, Table 14 reveals that many registered enterprises were not active and produce far below the installed capacity in 1984.

Two statutory bodies supervise the export of wood and wood products in Ghana. They are the Timber Export Development Board (TEDB) and Forest Products Inspection Bureau (FPIB). The TEDB publishes market intelligence reports to inform the trade on developments in other African countries with regard to prevailing market prices, direction of trade and stock levels and prices in importing countries. FPIB vets and approves all export contracts which satisfy minimum guiding prices for the species and specifications.

Until 1979, there seemed to be emphasis on log production for export. For various reasons most sawmill production was for the local market. 1980 saw a ban on the export of 14 predominant species in log form partly to make these species more available for local conversion and also to encourage greater extraction of lesser known species. Following the above ban, there has naturally been shifts in the relative proportions of logs and sawn timber exports, particularly in value. The number and volumes of lesser known species have also increased on the export market.

Table 14. Timber industry profile, 1975 and 1984

Activity area	No. of enterprises		Installed capacity ('000)		Industrial output ('000M3)	
	Registered 1975	Active 1984	1975	1984	1980	1984
Logging	600	190	2,500	1,680	600	500
Sawmilling	164	100	1,100	420	210	250
Plymilling	9		100	40	48	50
Veneer	12	10	45	15	22	25
Chipboard	...	1	15	...	8	6
Large furniture	10	10	30	20	25	20
Medium furniture	25	30	55	30	40	45
Flooring	4	2	15	10	12	8
Doors (Flush &	2	3	15	10	12	6
Profile boards	2	5	10	8	10	10

Source: Government of Ghana.

Note: Number of enterprises not additive owing to integration in more than 2 area of activity.

Available figures show that in 1985 capacity utilization achieved was 59 per cent for sawmilling, 55 per cent for plywoodmilling and 56 per cent for veneer slicing/peeling. Export orders exceeded supply capacity at a ratio of 3:1. In 1984 an increase of 22.2 per cent over 1983 earnings was recorded. In 1985 it recorded a 72.7 per cent increase over 1984 earnings.

A critical appraisal of the raw material base and production infrastructure, currently being rehabiiitated, reveals the existence of significant potential for investment and development.

Furniture parts, mouldings, doors, wooden toys and flooring production has been on the increase in recent years. Most of the factories involved in secondary wood processing for export are staffed with qualified and experienced Ghanaian and expatriate personnel. Most of them also are appropriately equipped with kiln driers without which export production is

difficult. It is estimated that there exist in Ghana approximately 1,000 m^3 of Kiln drying capacity.

The principal trading partners include Europe which has been the predominant partner with exports going to Federal Republic of Germany and UK. The US has imported lumber and rotary veneer; the Middle East, principally Saudi Arabia, has taken lumber doors and mouldings. But for the under-utilization of capacity better results would have been achieved.

Government has initiated an action programme to stimulate export performance. The programme comprises:

1. A sector profitability review with appropriate adjustment of the exchange rate to make Ghana's wood competitive in price. This has been an ongoing activity and has curbed the imbalance in the cost-price ratio which had made sale on the local market more profitable.

2. Formulation of a rehabilitation programme and procurement of rehabilitation inputs, especially of forest extraction equipment and transport, under World Bank credit and other Bilateral Aid. Most of the funds made available have been committed and machinery and equipment were expected around May/June 1986. For several companies production will increase with the new machinery, three to five-fold.

3. Abolition and Restructuring of the erstwhile Ghana Timber Marketing Board (GTMB) into the Timber Export Development Board (TEDB) responsible for market intelligence, export promotion and development and the Forest Products Inspection Bureau (FPIB), to carry out quality control and inspection.

4. Strengthening of support institutions to lend infrastructural support to the regeneration of economic and social activities in the sector. Under this, the Ghana Railways and Port Authority are concurrently being rehabilitated to respectively ease transport to the harbour and facilitate shipment.

5. Re-estimation of available wood resources; very necessary for promotion of lesser known species.

The Government's current sectoral rehabilitation programme will result in increased production of logs and processed timber during 1987. The overall aim is to increase export earnings from the 1985 level of $29.5 million to $75 million by 1987. This is a realistic target and can be met provided that adequate financial resources are provided for the rehabilitation of the wood industry.

2.7 Summary

The growth of the manufacturing sector can be divided into three phases. MVA grew rapidly during 1961-70, but there were wide fluctuations during 1970-77. During 1977-83 both manufacturing output and MVA declined sharply. Employment which grew rapidly during 1960-77 has not contracted equally rapidly with the result that productivity within the sector has declined since 1977. Moreover underutilization of capacity is widespread throughout the sector and current production levels are well below those achieved in the past. The manufacturing sector remains crucially dependent on imported inputs of both raw materials and capital equipment and intra-sectoral production linkages reamin very weak. Moreover there is some evidence to show that intra-sectoral linkages have actually declined since 1977 and the pattern of structural change achieved during the growth years has been reversed. The share of domestic-resource-based industrial branches - such as wood - and capital goods branches - particularly metal products - in MVA (of the large- and medium-sized enterprise sector) contracted significantly over the period 1970-84. This has lead to increase in the import dependence of Ghanaian manufacturing.

This import dependence is paralleled by a corresponding dependence on foreign capital. The Decrees promulgated during the mid-1970s obliged foreign firms to sell a substantial portion of their shares to Ghanaian nationals and to State enterprises. Foreign capital currently participates - either as sole owner or an investment partner - in enterprises generating more than 50 per cent of MVA. Usually the foreign firm is the dominant partner within the joint enterprise responsible for technology transfer, foreign procurement and

export marketing. Rates of return on foreign capital invested in Ghanaian manufacturing are reported to be high. Rates of return throughout Ghanaian manufacturing are significantly higher than in most developing countries - although they are not unusual by West African standards.

Rates of return on investment of public manufacturing enterprises (within both GIHOC and SEC) have also generally been positive. The existence of oligopolistic market structures and high levels of protection account for a significant proportion of the continuing profitability of both public and private sector firms. The Government has been increasingly concerned to improve management in both the public and private sectors. A new incentive system is being devised and institutional reorganization is also under way. These measures are discussed in Chapter 3.

The Government is also concerned to stimulate the growth of small-scale industry. Domestic private enterprises predominate within this sector. Relatively speaking this sector has contracted less during the present recession and it has shown greater ingenuity as far as technological adoption and substitution of local inputs for imports is concerned. Linkages with the large-scale manufacturing sector and linkages among small-scale enterprises are very low. Although the small-scale sector has survived the present recession, it has not grown in absolute terms. Manufacturing activity continues to remain highly concentrated in regional terms despite the provision of generous incentives by the Government for its geographic dispersion.

The Government has also attempted to stimulate the growth of manufactured exports. Although export potential exists in some manufacturing branches, the existing levels of export to output ratios are very low. Export growth is constrained by two major factors. First, products locally manufactured do not come up to international market standards and large sums of foreign exchange are required to rehabilitate and modernize Ghanaian firms before they can become effective international competitors. Second, the current international environment is not particularly conducive to the growth of manufactured export products - such as processed forms of cocoa - which are of export interest to Ghana. Incentives provided by the Lomé Convention for the growth of manufactured exports are largely confined to the primary

commodities sector. The potential for the growth of intra-regional manufactured exports within ECOWAS are yet to be fully exploited. The revitalization of the manufacturing sector will therefore in the short and medium run continue to depend on its capacity to generate domestic resources and foreign exchange allocations to a well defined action programme for rapid industrialization. In 1986 an IDA credit worth $53.6 million has been obtained for this purpose. The Government has put emphasis on a revitalization of industrial strategies and policies to make efficient use of resources allocated to the manufacturing sector. These policies are discussed in the next Chapter.

3. INDUSTRIAL POLICIES

3.1 Industrial objectives, policies and strategies

Ghana's first independent Government laid strong emphasis on the achievement of rapid industrialization. During the period 1957-66 manufacturing investment grew rapidly and an attempt was made to diversify the industrial sector by establishing large-scale public manufacturing enterprises and by closely regulating the private sector. Although the Nkrumah regime was strongly committed to a socialist industrial strategy it did not seek to directly appropriate foreign firms. Rather, plans formulated during this period, particularly the Seven-Year Plan covering the period 1963/64 - 1969/70, laid stress on the need to establish joint ventures involving State and foreign enterprise and saw this as a means for reducing the dominance of foreign capital in the Ghanaian economy. The Plan envisaged rapid industrialization as a means for mobilizing domestic investible resources, expanding employment opportunities and stepping up the pace of economic modernization. The Plan also stressed the need for the co-ordination of industrial strategies in the West African region and saw regional economic co-operation as the primary means for overcoming the market size constraint on the expansion of the intermediate and capital goods industries.

Killick argues that the basic policy perspective outlined in the Seven-Year Plan was broadly retained by most Governments during the next decade and a half.[1/] The share of government capital expenditure in total industrial investment has oscillated significantly - declining during 1966-71, increasing sharply during 1971-79, declining again during 1979-81 and experiencing growth during 1981-83. Since 1983 the Government has adopted a comprehensive programme for creating an efficient balance between public and private sectors of Ghanaian industry. This has in practice taken the form of providing a wide range of incentives for stimulating private sector investment.

Despite oscillations in the level of public industrial investment, most Governments have retained their commitment to a vigorous public sector

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1/ A. Killick, Economic Development in Action: Ghana, St. Martins Press, London, 1978.

regulation of industrial activity and to a reduction in the dependence on foreign capital.[1/] An elaborate system for the regulation of production, marketing, distribution, pricing and allocation of credit and of foreign exchange has grown up over the years. During the 1970s laws were enacted to increase the share of Ghanaian public and private sector participation in the management of manufacturing enterprises. Successive Governments have also remained committed to a wider regional dispersion of industry and to the promotion of small-scale enterprises. The growth of the administrative and policy procedures for the regulation of the manufacturing sector has been somewhat chaotic however and the Government has become increasingly concerned about the emergence of policy inconsistencies, functional overlaps and administrative loopholes which permit an evasion of regulations and controls. In 1983 the Government formulated a comprehensive economic strategy to deal with the growing foreign exchange crisis and to rationalize the process of macroeconomic regulation of the Ghanaian economy. This strategy - the Economic Recovery Programme (ERP) - was to cover the period 1983-86, but has been extended to 1988. The major features of this programme are as follows:

i) Exchange rate policy. A key element in the programme has been the reform of the exchange system. On April 22, 1983, surcharges and export bonuses were introduced, yielding effective depreciation from ¢ 2.75 = $1.00 to two rates, ¢ 23.375 and ¢29.975 applying to specified receipts and payments transactions and resulting in an implicit weighted average rate of ¢ 25 = $1.00. On October 10, 1983, the two rates were unified at a rate of ¢ 30 = $1.00, implying a further depreciation of 21.5 per cent. Since then Ghana has pursued a flexible exchange rate policy with a view to at least maintaining the exchange rate in real terms. This has led to six further adjustments in relation to the US dollar to ¢ 35 in March 1984, ¢ 38.50 in August 1984, ¢ 50 in December 1984, ¢ 53 in April 1985, ¢ 57 in August 1985 and ¢ 90 in February 1980.

ii) Customs Tariff. Rates simplified to a more uniform structure (25 and 30 per cent). The items which are not subject to import duties are crude oil and some minor items accounting for no more than 10 per cent of total non-oil imports. A 50 per cent tax was imposed on Special Unnumbered Licenses in April, 1985, and then lowered to 30 per cent in August 1985.

1/ The only exception to this was the Liamann administration of 1979-81.

iii) Prices and Incomes Policy. A related component of the programme is the establishment of realistic relative prices and income in the context of the large movements in the exchange rate:

- Producer prices for cocoa were raised by 67 per cent from ₵ 12,000 per ton to ₵ 20,000 per ton in April 1983, by 50 per cent to ₵ 30,000 per ton in May 1984, and by a further 87 per cent to ₵ 56,000 per ton in May 1985. Cotton prices were raised by more than 100 per cent and tobacco prices by 50 per cent in 1985. Cocoa was further raised by 40 per cent in 1986.

- Administered prices of imported goods and services have been adjusted to permit a full pass-through of the higher cedi cost following successive exchange rate movements, thus eliminating consumer and price subsidies. There were two main exceptions: the subsidy on fertilizers was retained until April 1984 when fertilizer prices were raised nine-fold to ₵ 450 per bag; in the case of petroleum, a temporary subsidy was allowed to emerge as petroleum prices were raised gradually until the subsidy was eliminated, ahead of schedule, in March 1984. Tariff rates on utilities have been adjusted upwards in April 1983 to reflect the cost structure at the new exchange rate.

- Price Controls. Following successive devaluations, importers and domestic producers have been permitted to adjust their prices periodically to reflect the higher cost of imports and increases in wages and other costs.

- Wages and salaries. With effect from May 1, 1983, the minimum wage rate was raised from ₵ 12 to ₵ 25 per day. This resulted in an increase in wages on average by about 60 per cent for the civil service, and 25 per cent for other sectors. With the acceleration in inflation in 1983, real wages declined further, necessitating a second wage increase of, on average, 40 per cent in April 1984 and 50 per cent in December 1984. The minimum wage was also raised further in steps to ₵ 90 per day by January 1986. The Government's policy is to increase real wages, while containing the impact on the budget through redeployment policies. An experiment in redeployment is underway at the Ghana Cocoa Board.

- Interest rates. A flexible interest rate policy has been adopted with a view to achieving positive real interest rates in the medium term. Between October 1983 and September 1986, all interest rates have been raised considerably. Savings rates have been raised from 8 to 23 per cent, and lending rates from 14 to 32 per cent.

iv) Fiscal policy. The restoration of fiscal discipline was a major component in the stabilization programme. The overall deficit and the Government's net recourse to the banking system have been severely curtailed despite the adverse impact on revenues of the drought and lower than anticipated import levels through large expenditure cuts. Starting with the 1984 budget and for the medium term, fiscal policy objectives include increased domestic resource mobilization to support larger outlays on operations and maintenance expenditures and an increase in public investment in support of the recovery programme.

v) External payment arrears. Such arrears had accumulated to $601 million at the end of April 1983. The Government is committed to a phased reduction of these arrears as an essential element in reestablishing the country's creditworthiness. Substantial progress has already been made in this direction, and after valuation and other adjustments, outstanding arrears at the end of 1984 stood at $232 million.

vi) Rehabilitation programmes for key sectors. Rehabilitation programmes were drawn up for key sectors including cocoa, gold, timber and mining as part of the Government's 1984-86 Recovery Program. These programmes include sector-specific measures designed to restore incentives, improve management, ensure adequate inputs and replace capital. The key export sectors are benefitting from export retention schemes which enable exporters to retain a certain percentage of their foreign exchange earnings to import essential raw materials, spares, and equipment. Management contracts are being negotiated in selected public corporations and institutional reforms are underway in others.

The impact of these measures on the manufacturing sector has been as yet somewhat limited, but there are indications that capacity utilization rates are rising and direct foreign investment is once again picking up. The Government remains concerned with stimulating industrial growth and restructuring industrial production and has announced a series of measures to achieve these objectives during the second phase of the ERP in 1986-88. These measures are reviewed in the next section.

3.2 Recent changes in industrial policy

The Government has since 1983 evolved an industrial strategy within the context of the ERP policy framework. This strategy takes the form of a medium-term programme which attempts (a) to revitalize industrial production by increasing the rate of capacity utilization and (b) to develop a policy framework which can increase the efficient use of resources within the industrial sector.[1/]

Since 1983, the Government has taken steps to improve the business environment for private enterprise. The Government has inducted private

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1/ This programme was drawn in close collaboration with the IMF and World Bank teams which negotiated the Standby Agreements and the IDA and African Facility Credit during 1983-86.

sector representatives into policymaking bodies such as the National Economic Commission and the tripartite committee (which deals with pricing, wage and other issues involving Government, management and labour). It has recently revised the Investment Code, which provides for greater participation of both domestic and foreign private enterprises in the manufacturing sector.

In order to overcome procedural impediments to exports, the Government is actively considering a system whereby exporters will no longer need to be registered and the scrapping of the current requirement of export permits for most exports. The documents required by Government for most exports (for customs clearance, foreign exchange administration and statistical purposes) will be simplified.

To provide further incentives to exporters of manufactured products, the Government is also considering two ways of improving the foreign exchange retention scheme: first, by increasing the percentage of earnings to be retained by exporters of non-traditional products from 20 per cent to 25 per cent; and secondly, by increasing the flexibility of utilization of retentions. The customs duty drawback scheme for imports for exporters will be reinstated on an automatic basis. A temporary duty-free admission of imports under arrangements and other steps to promote are under consideration. To assist exporters with credit needs between the time of shipment of goods and receipt of the foreign exchange proceeds, the Bank of Ghana is considering the introduction of a rediscounting facility.

Finally, the Ghana Export Promotion Council will be given appropriate autonomy, standing, composition, staff, and budget. It would be responsible for monitoring the improvement of the policy and administrative framework for exports, bringing together the Government and exporters, carrying out studies of export potential and problems, and export promotion activities in Ghana and abroad. The flexible exchange rate policy already in effect will continue with a view to ensuring the high and stable profitability of the export sector.[1/]

1/ The Government, on September 25, 1986, devalued the Cedi by 30 per cent from ¢ 90 = $1 to ¢ 128 = $1. It now operates a two-tier "crawling peg" exchange rate adjustment system. This has improved the profitability of exports both in absolute terms and relative to domestic sales.

The Government also remains committed to progressive economic liberalization. The tariff structure was simplified in 1983 so that most industry-related goods are subject to a 30 per cent tariff and a few to 25 per cent. This tariff structure provides a relatively uniform pattern of protection. However, the protection afforded by import quotas and the strict allocation of foreign exchange in many cases exceeds that of the tariff structure. The Government's steps to adjust the exchange rate effectively raise the nominal price of imported industrial inputs, encourages greater utilization of domestic inputs, helps curb the excessive demand for imports thereby facilitating import liberalization, and improves the international competitiveness of the industrial sector. The Government intends to keep the exchange rate under review and make further adjustments as necessary to achieve policy goals. The Government is currently consulting with the International Monetary Fund on the pace and manner of further exchange rate adjustments.

The Government is aware of the limitations of the present system of import licensing which determines administratively the uses of foreign exchange and creates opportunities for rent-seeking activities. While a number of efforts have been made to streamline import licensing procedures and further measures are contemplated in this area, the Government has already taken two significant steps in the area of import liberalization. First, under the Special Unnumbered Licenses (SUL) system, which was reactivated under the recovery programme, it is possible to import a wide range of goods when the importer arranges his own foreign exchange (from remittances and other sources). The SUL system is useful in three respects: (a) it eases the overall supply situation by making available a wide range of consumer goods; (b) it places a ceiling on the level of effective protection afforded by quantitative restrictions to local producers by making available competing imports at the parallel market exchange rate plus SUL duties; (c) it provides an alternative means for efficient producers to procure additional inputs or spares beyond the amounts available through the import licensing regime. Full realization of these benefits was somewhat hampered by the requirement that only goods appearing on a list specified by the Ministry of Trade could be imported under SULs, and by the fact that special taxes on SULs made no distinction between imports of inputs and spares for domestic manufacture and imports of consumer goods. The Government has, therefore, recently further

liberalized imports under SULs by shifting from a positive to a small negative list. In order to encourage the use of SULs for imports of industrial raw materials and spares, the Government has agreed to make taxes and special charges on SUL imports of these inputs by registered industrial enterprises eligible for waivers and credits on the same basis as for ordinary imports of inputs. Second, it has introduced export retention scheme to enable exporters to meet their foreign exchange needs. Urgent consideration is also being given to increasing the percentage of earnings retained and further liberalization of the use of these retention accounts.

In 1985 the Government issued a public statement on industrial policy outlining the objectives of industrial policy and action programme. The main objectives of industrial policy during the second phase of the ERP are to:

(a) increase industrial output through greater use of existing installed capacity;

(b) improve supplies of essential goods (e.g. food, textiles, matches, cutlasses, etc.) to meet the integration demands of economic activities in the priority sectors of the economy;

(c) remove production bottlenecks in the most efficient industries and achieve significant cost reductions in others that are potentially viable through selective rehabilitation;

(d) develop economically viable linkages among local industries and between key economic sectors (e.g. agriculture, construction, transport, health, education);

(e) raise export earnings of non-traditional manufactured goods.

The Government's strategy is motivated by consideration of both efficiency and equity. The need to boost economic recovery by reviving industrial production and growth in the face of severe resource constraints demands that resources be used in the most efficient way possible to meet the needs of the Ghanaian public at competitive prices and to generate additional foreign exchange. Equity requires that this task be approached in a way that gives producers an opportunity to adapt from the past - highly protective policy environment - to a regime where success depends on being efficient and productive. These considerations can best be accommodated through an approach that provides appropriate incentives and opportunities on a consistent basis across all industries.

In the short term the strategy is to make available additional resources to the more efficient priority industries which can make immediate supply response. The medium-term strategy would be to rehabilitate the potentially viable and efficient industries and to develop the local raw material base for industries, taking account of the country's comparative advantage, in order to reduce their dependence on foreign inputs.

In the long term, the objective is to achieve an industrial structure that is more closely linked to domestic inputs and needs, that can provide a higher share of its own foreign exchange requirements, and that can sustain a rate of growth of output and employment above the economy-wide average but in balance with the rate of growth of resources and demand generated by agricultural development. This means phasing out unviable excess capacity that constitutes a drain on resources and cannot supply the Ghanaian market competitively, continuing the process of rehabilitation in the most viable existing plants, and investing in new industries that can realize Ghana's comparative advantage and export potential. These objectives will be supported by establishing a policy environment in which success depends on efficient use of scarce resources and in which incentives are balanced between sectors and between growth and employment objectives.

Action programme

The industrial objectives and strategy described above will be pursued through the following major policy measures (discussed below):

- phased reform of production incentives to promote more efficient, competitive, resource-based, labour-intensive and export-oriented industrial production, while giving firms an opportunity to adjust;

- greater access by efficient producers to imported industrial inputs and spare parts while progressively reducing administrative decisions and allocations;

- export incentive and promotion efforts to provide a return to exports that is equivalent to that on domestic sales and to compensate for disadvantages and costs that would reduce export competitiveness;

- a positive climate for industrial operation and investment, including reasonable protection and investment incentives that are relatively uniformly and automatically available across broad classes of priority activities and that provide adequately for small-scale and employment-oriented activities;

- financial reforms to increase the ability of the financial sector to make credit available for industrial adjustment and rehabilitation, and to provide incentives for more labour-intensive techniques;

- more limited direct public sector participation aimed at making the most effective use of scarce public, financial and managerial resources.

To improve the performance of public industrial enterprises, a report on reforming and restructuring of the state-owned enterprise (SOE) sector was prepared by the UNDP and the World Bank early in 1986.

The Government is currently reviewing this report. During the 1986-88 period the Government intends to restructure the State enterprise sector, through institutional restructuring, management reform, selective rehabilitation, and reducing the role of the State in selected SOEs through encouraging joint ventures and divestiture. An Action Plan, currently being prepared by a Task Force of the Government and two sub-committees, pays particular attention to the issues of labour deployment and redundancy and to the planning or the selected divestiture of State shareholdings. Given the large number of SOEs in the industrial sector, their restructuring would be a major component of the Action Plan. The overall strategy outlined by the Task Force aims at limiting the direct participation of the State to critical areas in which there is a gap in the availability of private investment or some other exceptional justification for direct public intervention. Industrial SOEs will be expected to operate on a commercial basis and not depend on government financing.

The SOE task force has recommended far-reaching changes to Government which are in process of consideration and decision. The proposals include the division of SOEs into three groups: for retention, joint ventures and full divestiture or liquidation. The Government has already decided that a number of SOEs are candidates for turning into joint ventures, such as Bonsa Tire, Tema Food Complex, State Construction Company and Ghana Sugar Estates among others. Since divestiture requires appropriate machinery and will take time even if successful, these arrangements are being set in motion, while transitional measures (including any necessary recapitalization) for joint venture candidates are also being pursued. The Government has further requested in-depth studies of a number of industrial SOEs.

The Ministry of Industries, Science and Technology will as an input into the overall reform rationalize selected industrial SOEs by grouping all those in a single sector into one strengthened enterprise. There is and will be no barrier to the entry of private firms into these sectors. The rationalization will completely transform the present structure of industrial SOE groupings (GIHOC, NIC, GEA and Ghamot) and result in an industrial SOE sub-sector significantly smaller than its present size.

The enterprises will themselves be treated like all other SOEs in line with the Government's criteria, for retention, joint ventures, liquidation, etc. The industrial SOEs will be placed on one of the three lists referred to above. Apart from the regrouping mentioned above, the Government does not intend to create new industrial SOEs in the 1986-88 period.

Pending a restructuring of the industrial public enterprises the Government has decided that during the 1986-88 period the public investment in such enterprises should be limited to the most urgent rehabilitation component which is financially and economically justified and for which the necessary foreign exchange to make the full use of rehabilitated capacity is likely to be available within the constraints of the annual import programme for industry. The Government has in 1986 completed a review of large new and on-going projects and formulated a core programme of capital expenditures for priority consideration in the period 1986-88. It has been decided that the share of industrial public enterprises in this programme would not exceed 2.57 billion cedis (in constant 1985 prices) during the period 1986-88. Furthermore, these projects will be expected to show a satisfactory economic as well as financial rate of return as a criterion for proceeding with rehabilitation.

Total rehabilitation requirements were estimated in late 1985 by the Government to stand at $100 million[1/] and priority was to be given to the rehabilitation of industries which used domestic resources, produced basic consumer or exportable goods and could make full use of rehabilitated

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1/ It will be recalled that the rehabilitation provision of the IDA credit sanctioned in 1986 was only $10 million.

capacity. The Core Investment Programme for 1986-88 (see Appendix B) listed projects in the pharmaceuticals, tyre, and fibre producing industries as rehabilitation priorities. Total investment envisaged in these projects was estimated at ₵ 2,832 million ($31.46 million at the 1986 exchange rate). This represented only about 5 per cent of total cost of the Core Investment Programme.

It is clear therefore that the Government expects the private sector to play an important role in the revitalization of Ghanaian industry. The Government is aware that liquidity and creditworthiness constraints have hampered production responses by private firms. Therefore, the Government has decided to introduce a deferred debit scheme for import financing. Under this scheme the Bank of Ghana will, upon the request of a bank at the time of opening a letter of credit for import, defer the debit to the requesting bank's account as follows: 60 per cent of the cedi equivalent of the C.I.F. or imports would be debited six months after release of documents and the balance 40 per cent would be debited three months later (i.e. nine months after release of documents). The banks will in turn extend short-term loans to concerned importing enterprises. It is expected that this scheme will considerably ease the liquidity position of enterprises who at present are expected to pay 100 per cent of the cedi equivalent before obtaining release of documents. The Government will continue to keep a close watch on the import financing situation and will take measures as needed to adjust this scheme and/or take additional measures. With a view to encouraging firms to revalue their assets, thereby improving their creditworthiness, the Government has decided to exempt them from payment of stamp or other taxes on revaluations. The exemptions would be allowed until the end of 1987. The Government intends to continue its policy of maintaining real positive interest rates on deposits and loans and to attempt to ensure an adequate flow of credit to the private sector.

The new approach to industrial policy has already proved effective in attracting significant donor support. As mentioned above a credit facility equivalent to $53.7 million has been obtained from the World Bank for the purpose of industrial rehabilitation and adjustment in early 1986. A loan worth Fr 100 million has been sanctioned by France for the Ghanaian industrial

sector also in 1986.[1/] Japan, Saudi Arabia and the World Bank have provided loan finance for port development at Tenna and Takoridi. During 1980 the European Development Fund sanctioned a loan worth ECU 86 million for the support of the ERP of the Government of Ghana.

Renewed interest is also being shown by foreign investors. Major international firms reported to have committed investment funds in the industrial sector include firms from Europe, the Middle East and China. According to the Ghana Investment Centre the launching of the new investment code in July 1985 has stimulated foreign investor interest significantly. About 20 joint venture schemes had received official approval by mid-1986. A major initiative is investment undertaken by Lever Brothers for the construction of a citronella distillation plant at Bunso. Lever Brothers are trying to promote the development of a local citronella industry in collaboration with domestic investors and the Ministry of Agriculture. Lever Brothers have expressed willingness to construct and lease citronella distillation plants to local farmers and to guarantee purchases of citronella oil which will be used in its soap manufacturing factories. Demand for citronella oil is expected to double by 1990. Lever Brothers are also exploring the possibility for substituting locally produced fats and oils for imports in its plants.[2/] The substitution of local inputs for imports and the development of an appropriate production technology was a major theme of Ghana's first general trade and industry fair INDUTECH 1986. There were 500 Ghanaian and 25 foreign participants at the fair and according to the organizers several discussions on the establishment of industrial joint ventures were initiated at this venue.[3/]

1/ Fr 20 million are earmarked for the manufacturing sector. The rest of the loan has been allocated to the transport, telecommunication and electricity sectors.

2/ Details of some other projects are to be found in Economist Intelligence Unit, Ghana, Sierra Leone, Liberia Country Report, No. 2, 1986, London, pp.15/16.

3/ For a report on INDUTECH 1986, see "Ghana's Industrial Shop Window", Africa Business, May 1986, pp.12-17.

Continuing industrial progress requires that increased attention be paid to the strengthening of the institutional infrastructure of Ghanaian manufacturing. The next section reviews major initiatives taken in this field.

3.3 Institutional infrastructure and the improvement of management efficiency

As noted earlier a major effort at institutional reorganization is currently under way and a substantially new industrial institutional infrastructure is expected to emerge by the end of 1986. The Government has two objectives determining its institutional reorganization. These are:
(a) enhancing the efficiency of public industrial firms and rationalizing the system of management and control within the public industrial sector; and
(b) improving the incentive system for stimulating the growth of domestic and foreign private investment.

Public enterprises come under the formal jurisdiction of several ministries the most important of which is the Ministry of Industry, Science and Technology (MIST). Several attempts have been made towards increasing the autonomy of the public enterprises by grouping them under holding companies and other State bodies such as the Industrial Development Corporation (established in 1957 and abolished in 1961), the State Enterprises Secretariat (SES established in 1965 and converted into GIHOC in 1967) and the State Enterprise Commission (SEC established in 1978 and reconstituted in 1981). The statuatory companies are grouped under GIHOC, whereas companies acquired from the private sector and joint ventures are under the control of SEC. In general the greatest degree of organizational autonomy is enjoyed by the GIHOC companies. There exists a company management board which liaises between the company management and GIHOC corporate board.[1/] Nevertheless the companies have to deal directly with several ministries for obtaining licences and credit, altering wages and employment conditions and changing output price structures. These problems are also faced by the SEC group of companies managed by five holding corporations ATS, Loyalty, Ghanot, GEA and the National Investment Company (NIC). In general, management structures range

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1/ The company board is usually composed of business executives whereas the GIHOC board contains civil servants and politicans.

widely and there are many forms of industrial control. The situation is further complicated by the fact that the functional diversion of labour between the SEC and the individual ministries and financial institutions which deal with industrial companies is not ambiguously defined. A major objective of the present programme of institutional restructuring is the removal of confusion in the lines of authority governing individual enterprises and the establishment of explicit financial targets for evaluating performance. For these to be effective a relaxation of administrative controls on pricing, wages, import and credit allocation is required.[1/] Multiplicity of administrative controls have reduced the efficiency of public enterprises. Nevertheless as shown in Chapter 2 many industrial corporations have shown a healthy financial performance even in the current depressed economic environment and a rationalization of management structures can further enhance their capacity to accelerate the pace of industrial development.

The strengthening of government institutions in the industrial sector is a major objective of the IDA credit made available to Ghanaian industry in 1986. A total of $4.8 million (with a foreign exchange component of $4.1 million) has been sanctioned for this purpose. Financial assistance is to be given to the following institutions to support their organizational improvements and staff strengthening activities: (i) the Bank of Ghana (BOG), to train local bank, BOG, and other concerned Government staff in the areas of economic/financial analysis and restructuring; this training would go beyond the immediate needs of this Credit and would be designed to build project evaluation capability in local banks and ministries to improve the quality of investment analysis; (ii) the Ministry of Finance and Economic Planning (MFEP) to build staff capability for analyzing incentive policy issues for regulating appropriate policy measures, and monitoring the impact of policy measures; (iii) the Ministry of Industries, Science and Technology (MIST), to strengthen capability for formulating and implementing industrial policy and industrial restructuring programmes; (iv) the Central Bureau of Statistics (CBS), to

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1/ Currently price and wage changes are sanctioned by the Price and Incomes Board, and the Ministry of Finance and Economic Planning which along with MIST also sanctions import licenses. These are issued by the Ministry of Trade. The Bank of Ghana issues letters of credit and regulates sectoral credit forms.

carry out an industrial census (last done in 1962), timely compilation of industrial statistics, and updating and adoption of monthly processing of foreign trade statistics; and (v) the Ghana Standards Board (GSB) and the Food Research Institute (FRI) for the purchase of laboratory and office equipment to provide quality control, product testing and other services to manufacturers. The total cost (including contingencies) of these technical assistance and training activities is as mentioned earlier estimated to be about $4.8 million of which the proposed credit would finance $3.0 million (63 per cent), while the Government would provide $0.4 million (8 per cent), and UNDP would provide $1.4 million (29 per cent).

Major emphasis is being placed on the development of technical capability to evaluate private sector projects and the incentives system is also being streamlined. The Government is particularly concerned to stimulate the development of the small-scale industrial sector on the one hand and to increase direct foreign investment in the form of joint venture capital on the other. This is to be achieved by eliminating policy contradictions which created scope for business malpractices. There is also a general shift from administrative control of private sector activity and the creation of a liberal economic environment. The Investment Code issued in July 1985 clearly affirms Ghana's commitment to a mixed economy. It provides generous fiscal incentives for investment in export-oriented industries, industries which are domestic resource intensive and those which produce agricultural inputs. The general policy direction of the Industrial Code has recently been conformed by the issuance of the Government's statement on industrial goals and priorities. In order to stimulate the expansion of small-scale enterprise the Government established the National Board for Small Scale Industries (NBSSI) in 1985. It will provide technical assistance to agro-based firms at the village l· Although the number of registrations of small-scale enterprises has beeı. increasing in recent years, there is little evidence that the Ghanaian private sector is increasing its capacity to substitute public investment in the industrial sector. Similarly although increasing interest is being expressed by foreign investors the level of direct foreign investment is by no means sufficient to significantly raise the capacity utilization rate from the existing 30 per cent to the 50 per cent envisaged for 1988 by the ERP. There is thus a very real danger that Ghana might experience a significant level of de-industrialization in the years ahead and government policy needs to address the problems associ d with this phenomenon.

3.4 Manufacturing problems, prospects and the role of technical assistance

The de-industrialization process has proceeded in a haphazard and unco-ordinated manner since 1977 and its net effect has been an increase in the level of external dependence and a decrease in sectoral inter-linkages. It is necessary to halt - and reverse - the de-industrialization process and to reduce the structural imbalances which have emerged during the period of industrial recession.

The single most important cause of Ghanaian de-industrialization is the collapse of domestic demand that occurred during 1977-83. A sustained revival of domestic demand is a prerequisite for manufacturing restructuring and growth in Ghana. The macroeconomic policy framework provided by the ERP - in its first and second phase - has stimulated domestic demand significantly and the scope for the growth of manufacturing production has widened, with MVA growing at 14.2 per cent and 5.4 per cent in 1984 and 1985 as against several years of negative growth rates. However, sectoral growth rates remain low. This is largely due to the very high dependence of Ghanaian manufacturing on imported inputs and on foreign exchange allocations.

The Government has developed a rehabilitation strategy which emphasizes the expansion of resource-based industries and small-scale enterprise. Credit has been obtained from a variety of international sources for financing industrial rehabilitation and for obtaining essential imports. The public investment programme for 1986-88 identifies projects in the chemical and non-metallic minerals branches as priority projects. The Government expects the private sector to play a leading role in manufacturing restructuring and growth. During 1986 many foreign firms have expressed interest in investments in food processing, chemicals, pharmaceuticals and capital goods projects. However, the inflow of direct foreign credit and official credit allocated to the manufacturing sector remains significantly below the estimated rehabilitation and modernization needs.

Ghana's industrial adjustment programme, drawn up with World Bank assistance and presented to both bilateral and multilateral donors in May 1986, aims at confining resources to industries which are capable of survival without excessive long-term protection. Credits from the

International Development Association (IDA) and Special Africa Facility totalling $54 million for the industry programme have already been approved. This together with local resources accounts for only about 30 per cent of the total $240 million required for industrial rehabilitation. Of the total $240 million, the largest proportion goes to food product industries, with $77.2 million, followed by textiles, with $55.4 million. Other industries to be benefitted include wood processing, paper, soap and metal projects. In addition, applications for financial assistance cover beverages, tobacco products, rubber, plastics and pharmaceuticals. While capacity utilization would be boosted, excess capacity would be severely reduced to reflect market requirements. Import requirements for full capacity outweigh available foreign exchange resources.

In these circumstances the prospects for the development of export-oriented manufacturing activities remain limited. This is so firstly because the cost of modernizing firms up to the level whereby they can become competitive in world markets is extremely high, particularly in terms of foreign exchange requirements. As against this the rehabilitation costs of domestic demand-oriented branches are relatively low - indeed as shown in the case of the textiles branches, a significant increase in capacity utilization rates without undertaking substantial rehabilitation and modernization expenditure is possible. Secondly the international environment is unlikely to encourage rapid export growth of Ghanaian manufacturing. Even in the food processing branches the prospects are not particularly bright. The structure of the international market in cocoa processed products discourages cocoa processing - particularly the higher value added content cocoa powder - in the developing countries. Moreover since Nigeria, Ghana and Côte d'Ivoire are likely to be competing for similar world export markets, the prospects for the growth of inter-regional trade in manufactured products are also low unless arrangements for long-term co-operation can be made to create a regional division of labour - and a corresponding regional distribution of manufacturing capacity and investment - in production of manufacturing exports.

In the short run it is therefore essential that Ghana pursues a highly selective import-substituting industrialization strategy. But this strategy must pay close attention to the question of industrial efficiency. Whereas

some trade protection is undoubtedly necessary to stimulate the growth of domestic demand-oriented branches - textiles, wearing apparel, pharmaceuticals, metal processing and machinery - care must be taken to ensure that protection levels decline over time and protection is granted on a highly selective basis. In particular those firms must be encouraged which show a rising capacity for the use of domestically produced resources and which produce inputs for domestic users leading to scales of production consistent with the resources of the country. Even if industry's direct foreign exchange earnings remain low it can make a positive contribution towards overall foreign exchange resources by significantly enhancing the productivity of the agricultural sector which is likely to remain by far the largest foreign exchange earner in the foreseeable future. If industry's contribution to the growth in agricultural productivity is to be maximized, emphasis must be placed on the development of the small-scale enterprises which supply much of agriculture's equipment needs and on the development of a local fertilizer industry.

The main advantage of pursuing a selective import-substituting industrialization strategy is that it will permit the creation of a viable industrial base in Ghana. This cannot be achieved by channelling resources mainly towards firms and sub-sectors which are presently considered viable on the basis of world prices. Concentrating on just these activities - identified for example through conventional domestic resource cost (DRC) analysis - will lead to a drastic depletion of existing productive capacity. This will significantly increase the vulnerability of the economy - and the manufacturing sector - to external shocks despite increases in domestic resource content of manufacturing activity. Many of the activities which may fail the DRC test are nevertheless essential because they can contribute towards filling essential structural gaps within the manufacturing sector and reducing external dependence. They may also be essential because of their impact of their development on widening the technological capacity of the economy. This is particularly true of the capital goods branches which are yet to graduate from the material processing to the machinery producing stages and which so far serve only agriculture. There exists significant scope for expanding repair and maintenance services and for generally strengthening linkages within the manufacturing sector. There is also a need to stimulate the growth of R&D activities of large-scale manufacturing enterprises in order

to enhance their capacity to adopt imported technology on the one hand and to create appropriate indigeneous technologies suited to local resource endowments on the other.

One of the main strategies as pertains to industry is to develop or adapt the type of technologies which are appropriate to human and material resources of the economy. This will not mean a mere transfer of modern technological processes available, but the adoption of the type of technology that will ensure optimum allocation of national resources.

UNIDO is currently providing technical assistance to industrial planning and programming and in the organization of the First Industry and Technology Fair, 1986. UNIDO's sector-specific technical co-operation projects encompass furniture and petroleum industries. Technical assistance is required for restructuring production units in branches such as agro industries, textiles, and engineering. There is a particular need to provide an assessment of inter-sectoral linkages within the manufacturing sector. Assistance is also needed for a regulation of accountancy practices and procedures and for the development of a wide range of management skills. Technical assistance for improving the performance of public enterprise and small-scale firms - and for increasing subcontracting ties between them - can also be very useful. Attention could be paid to increasing regional economic co-operation, both to co-ordinate the national strategies of West African States in world markets and to stimulate the growth of inter-regional manufacturing trade.

Feasibility studies on using local limestone and granite to produce composite cement have been completed. Studies on the use of the country's abundant clay resources - now used for burnt bricks and tiles - to replace kaolin in paint and drug manufacture, and a project for composite flour milling using local maize and other cereals are under way. A list of manufacturing projects seeking different types of external assistance is presented in Appendix C. The creation of new enterprises under the auspices of bilateral and multilateral sources could streamline and revitalize the manufacturing sector amidst clear signs of a "positive turn-around" in Ghana's economic performance.

Appendix A

Statistical Tables

Table A-1. Production of some selected manufactured commodities, 1975-83

Item	1975	1976	1977	1978	1979	1980	1981	1982	1983
Milk reconst (m liters)	37.8	51.8	40.1	39.9	34.4	13.4	15.9	7.6	10.0
Ice cream ('000 liters)	927.0	1,466.0	2,580.0	2,905.0	2,101.0	2,053.0	2,106.0	628.0	444.0
Milo (tons)	1,425.0	2,026.0	2,776.0	1,747.0	1,845.0	1,211.0	969.0	741.0	-
Wheat flour (tons)	63,204.0	67,626.0	74,177.0	81,594.0	92,960.0	89,698.0	73,245.0	25,401.0	18.0
Sugar (tons)	11,347.0	12,140.0	11,772.0	6,966.0	5,787.0	4,014.0	1,542.0	56.0	-
Cocoa butter (tons)	17,610.0	19,568.0	17,027.0	13,994.0	10,560.0	10,985.0	9,928.0	8,764.0	8,818.0
Cocoa liquor (m liters)	3,368.0	3,202.0	3,325.0	3,860.0	3,784.0	2,257.0	2,776.0	2,765.0	1,558.0
Cocoa cake (tons)	22,325.0	22,798.0	19,890.0	15,463.0	10,241.0	12,613.0	10,775.0	10,178.0	11,321.0
Beer (m liters)	63.3	77.5	71.8	49.6	45.1	44.5	52.7	33.9	31.0
Soft drinks ('000 crate)	2,167.0	2,811.0	1,814.0	2,229.0	1,847.0	1,362.0	1,459.1	802.0	382.0
Cigarettes (millions)	2,339.0	3,121.0	3,219.0	2,095.0	1,666.0	2,028.0	1,611.0	1,208.0	1,074.0
Cloth (m meters)	121.3	102.9	94.4	88.1	66.0	36.5	30.5	7.1	7.1
Jute bags ('000)	3,700.0	3,686.0	3,920.0	2,495.0	.	3,228.0	3,097.0	1,723.0	1,697.0
Margarine (tons)	2,613.0	3,298.0	1,399.0	1,284.0	766.0	935.0	1,271.0	732.0	275.0
Guardian soap (tons)	-	-	4,369.0	3,138.0	4,516.0	6,666.0	8,358.0	4,199.0	2,649.0
Toilet soap (tons)	2,746.0	2,581.0	2,109.0	1,050.0	1,319.0	1,059.0	1,019.0	504.0	448.0
Tooth paste (tons)	236.0	279.0	275.0	89.0	181.0	98.0	227.0	70.0	27.0
Petrol ('000 tons)	252.8	260.0	264.3	268.7	227.6	245.7	252.6	244.0	155.0
Kerosene ('000 tons)	99.6	98.1	111.3	126.3	123.6	119.5	130.7	133.0	77.0
Diesel, gas oil ('000 tons)	345.6	353.3	322.9	311.8	283.1	283.2	296.2	287.0	164.0
Cement ('000 tons)	666.3	678.5	565.1	489.1	247.8	294.3	396.0	252.0	278.0
Iron rods (tons)	2,865.0	6,148.0	7,280.0	2,863.0	3,757.0	5,378.0	5,084.0	2,247.0	1,535.0

Source: Central Bureau of Statistics, Quarterly Digest of Statistics, June 1984, p.12; Economic Survey 1981, August 1983, p.74.

Table A-2. Annual indexes of large/medium-scale manufacturing production, 1977-84
(1977 = 100)

	Commodity Group	ISIC Code Nos.	Weight	1977	1978	1979	1980	1981	1982	1983	1984
1.	Food manufacturing	311-312	15.00	100.0	84.0	75.6	70.0	58.8	38.2	46.3	29.3
	1.1 Dairy & fish products	3111-3114	2.87	100.0	82.1	51.0	41.6	42.5	22.4	15.7	19.3
	1.2 Vegetable oil	3115	0.58	100.0	118.2	393.2	218.0	105.0	36.4	77.1	74.1
	1.3 Grain milling & cereal products	3116-3117	4.62	100.0	80.3	65.9	69.9	56.0	23.0	21.0	34.7
	1.4 Sugar	3118	0.69	100.0	59.2	49.2	34.1	13.1	0.5	-	-
	1.5 Cocoa products	3119	6.24	100.0	89.2	67.5	73.4	69.1	61.1	81.4	29.1
2.	Beverage industries	313	8.11	100.0	77.0	75.0	70.2	78.2	50.7	42.5	60.0
	2.1 Distilling & blending sp.	3131	0.87	100.0	62.7	91.3	85.2	49.9	34.1	11.8	7.8
	2.2 Beer	3133	6.70	100.0	74.6	71.1	67.3	79.6	52.2	47.6	68.3
	2.3 Soft drinks	3134	0.54	100.0	130.0	97.6	82.0	106.7	58.8	28.6	40.6
3.	Tobacco & tobacco products	314	7.75	100.0	66.1	52.6	67.0	50.9	38.1	33.7	63.4
4.	Textiles, wearing apparel & leather goods	32	13.71	100.0	81.5	69.2	41.4	32.1	15.7	10.6	15.9
	4.1 Textiles & garment manufacturing	3211-3214, 3219, 3226	12.63	100.0	80.1	68.9	36.8	29.3	12.3	10.4	15.8
	4.2 Cordage, rope & jute products	3215	0.32	100.0	51.6	0.0	47.8	64.4	35.8	15.4	42.9
	4.3 Shoes & other leather goods	3231, 3233, 3240	0.76	100.0	119.6	104.9	113.7	64.3	63.3	11.0	6.9
5.	Sawmills & wood products	33	7.22	100.0	92.1	70.2	52.0	52.4	36.0	45.6	59.4
6.	Paper products & printing	34	1.94	100.0	103.5	70.8	80.8	47.4	26.9	76.4	72.0
	6.1 Paper & paper products	3412, 3419	0.58	100.0	104.8	49.5	50.3	40.0	9.2	10.8	25.0
	6.2 Printing & publishing	3420	1.36	100.0	103.0	79.8	93.8	50.5	34.4	107.9	92.1
7.	Petroleum refining	353	19.00	100.0	96.0	83.1	87.9	90.2	88.0	53.1	63.0
8.	Chemical products other than petroleum	35 less 353	6.56	100.0	40.5	36.0	34.7	34.7	17.1	18.6	40.4
	8.1 Soap & other toilet preps.	3523	1.59	100.0	64.7	62.5	66.0	71.0	34.3	22.9	35.1
	8.2 Chemical & rubber products n.e.c.	352 less 3523	4.97	100.0	31.2	27.2	24.7	23.1	11.6	17.2	42.1
9.	Cement & non-metallic mineral prod.	361-369	2.98	100.0	87.2	44.0	52.1	71.4	46.5	50.3	42.4
10.	Iron & steel products	371	3.25	100.0	39.3	51.6	73.9	69.8	30.9	12.8	26.3
11.	Non-ferrous metal basic indus.	372	9.62	100.0	90.3	67.2	111.8	104.5	113.8	25.6	-
12.	Cutlery & non-ferrous metal prod.	3811	0.49	100.0	67.0	45.1	33.1	20.1	4.4	9.1	10.1
13.	Electrical equipment & appliances	383	1.34	100.0	73.2	33.5	26.1	14.8	14.8	4.0	19.1
14.	Transport equipment & other products, n.e.c.	384-390	3.03	100.0	76.8	67.7	78.5	30.4	32.5	8.6	6.5
	All manufacturing	3	100.0	100.0	81.0	67.8	69.0	63.3	50.4	35.3	39.3

Source: Central Bureau of Statistics, Industrial Statistics, December 1983; Quarterly Digest of Statistics, June 1984, CBS estimates.

Table A-3. Census value added per worker in large- and medium-scale industrial enterprises, by sector and type of ownership[a/], 1970-81
(Current prices, Cedis)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Mining and Quarrying												
State	479	351	510	877	1,598	4,057	1,952	1,011	6,181	10,982	15,353	12,051
Joint State/Private	1,688	1,916	5,404	5,911	7,873	3,880	5,166	7,793	10,099	15,441	25,959	21,849
Private	4,021	4,620	6,426	4,812	6,442	12,795	4,428	5,453	22,146	44,080	17,188	19,484
Average	1,615	1,762	3,142	3,518	4,977	4,591	3,459	4,299	8,350	13,799	21,133	17,785
Manufacturing												
State	2,878	3,479	3,918	3,635	4,081	7,186	5,833	24,186	22,147	26,099	34,660	36,234
Joint State/Private	4,444	3,940	6,111	5,747	5,394	6,201	12,819	11,066	15,594	20,118	26,368	50,335
Private	3,984	4,508	4,844	5,952	6,579	8,327	9,918	13,742	13,892	23,523	38,478	50,788
Average	3,854	4,260	4,853	5,346	5,801	7,625	9,630	14,937	15,910	23,137	34,385	46,616
Manufacturing												
Av. VA/Worker deflated by WPI[b/]	12,392	14,013	14,232	13,850	12,422	11,822	12,175	14,937	10,714	9,045	9,906	8,532
Index of real VA/Worker (1977 = 100)	83.0	93.8	95.3	92.7	83.2	79.2	81.5	100	71.7	60.6	66.3	57.1

Source: Central Bureau of Statistics, Industrial Statistics, (various years); Quarterly Digest of Statistics, June 1984.

a/ Construction sector is excluded due to lack of data.
b/ Manufactures wholesale price index - old series adjusted to new series.

Table A-4. Net value added per person engaged in manufacturing, 1980-82
(Current Cedis)

	Industrial code of economic activity	1980	1981	1982
Slaughtering, preparing and preserving of meat	3111	41,392	66,962	38,362
Manufacture of dairy products	3112	24,737	74,735	46,277
Canning and preserving of fruits & vegetables	3113	9,551	7,910	6,370
Processing of fish, crustacea and similar foods	3114	15,637	16,155	16,705
Manufacture of vegetable and animal oils and fats	3115	12,292	22,802	19,402
Manufacture of grain mill products	3116	27,570	53,793	35,891
Manufacture of bakery products	3117	23,458	31,177	34,465
Sugar factories and refineries	3118	2,215	1,734	-16
Manufacture of cocoa, chocolate and sugar confectionery	3119	11,076	13,141	21,811
Manufacture of food products n.e.c.	3121	8,000	13,065	1,325
Manufacture of prepared animal feeds	3122	13,603	121,57[illegible]	96,817
Distilling, rectifying and blending spirits	3131	21,396	22,470	25,334
Manufacture of malt liquors and malt	3133	123,722	165,292	80,589
Soft drinks and carbonated water industries	3134	4,393	15,108	20,969
Tobacco manufacture	3140	463,233	773,688	573,426
Spinning, weaving and finishing textiles	3211	9,312	12,477	14,665
Manufacture of made-up textile goods except wearing apparel	3212	19,748	20,023	21,341
Knitting mills	3213	8,827	7,348	9,384
Manufacture of carpets and rugs	3214	8,068	13,576	-
Cordage, rope and twine industries	3215	9,929	16,003	8,120
Manufacture of textiles n.e.c.	3219	8,000	6,415	-
Manufacture of wearing apparel except footwear	3220	11,751	15,177	9,063
Tanneries and leather finishing	3231	18,061	17,078	30,263
Manufacture of products of leather and leather substitutes except footwear and wearing apparel	3233	6,108	29,497	5,477
Manufacture of footwear except vulcanized or moulded rubber or plastic	3240	11,087	11,750	3,224
Sawmills, planning and other wood mills	3311	7,378	9,919	11,278
Manufacture of furniture and fixtures except primarily of metal	3320	9,701	16,092	13,230
Manufacture of containers and boxes of paper and paperboard	3412	11,254	4,922	13,956
Manufacture of pulp, paper and paperboard articles n.e.c.	3419	7,405	8,178	56,654
Printing, publishing and allied industries	3420	7,393	8,298	12,540
Manufacture of basic industrial chemicals except fertilizers	3511	35,018	53,301	55,917
Manufacture of fertilizers and pesticides	3512	16,489	11,795	25,568
Manufacture of paints, varnishes and lacquers	3521	8,580	7,957	11,418
Manufacture of drugs and medicines	3522	23,573	13,076	16,548
Manufacture of soap and cleaning preparations, perfumes, cosmetics and toilet preparations	3523	22,647	54,856	49,469
Manufacture of chemical products n.e.c.	3529	15,630	20,974	5,152
Petroleum refineries	3530	695,787	569,153	765,761
Tyre and tube industries	3551	27,851	23,161	3,429
Manufacture of rubber products n.e.c.	3559	11,239	24,894	23,516
Manufacture of plastic products n.e.c.	3560	7,488	20,402	39,338
Manufacture of pottery, china and earthenware	3610	12,314	15,873	14,235
Manufacture of glass and glass products	3620	5,047	6,459	10,457
Manufacture of structural clay products	3691	1,478	7,242	3,577
Manufacture of cement, lime and plaster	3692	51,320	69,246	50,098
Manufacture of non-metallic mineral products n.e.c.	3699	5,288	21,966	29,336

Table A-4 (continued)

	Industrial code of economic activity	1980	1981	1982
Iron and steel basic industries	3710	23,070	42,449	18,344
Non-ferrous metal basic industries	3720	81,994	61,650	55,434
Manufacture of cutlery, hand tools and general hardwares	3811	26,718	45,953	31,637
Manufacture of furniture and fixtures primarily of metal	3812	9,750	27,788	13,405
Manufacture of structural metal products	3813	11,862	8,068	6,559
Manufacture of fabricated metal products except machinery and equipment n.e.c.	3819	10,424	13,897	24,713
Manufacture of agricultural machinery and equipment	3822	20,990	1,413	11,960
Manufacture of radio, television and communication equipment and apparatus	3832	1,148	8,308	8,157
Manufacture of electrical appliances and housewares	3833	1,449	1,306	-489
Manufacture of electrical apparatus and supplies n.e.c.	3839	23,302	23,302	10,417
Ship building and repairing	3841	8,110	2,461	1,661
Manufacture of motor vehicles	3843	4,973	10,454	17,412
Manufacture of motor-cycles and bicycles	3844	4,213	12,339	682
Manufacture of professional and scientific equipment n.e.c.	3851	16,378	17,810	23,383
Manufacture of photographic and optical goods	3852	9,957	10,900	8,188
Manufacture of jewellery and related articles	3901	7,207	19,615	49,067
Manufacturing industries n.e.c.	3909	9,727	15,928	14,623
Total		34,321	44,015	38,074

Source Central Bureau of Statistics, Industrial Statistics 1979-82, pp.28-29.

Table A-5. Manufacturing sector: nominal and real wages, 1970-84

Year	Urban consumer price index (1977=100)[a/]	Annual average nominal wages (¢ per year)	Index of nominal wages (1977=100)	Annual average real wages ('77 prices)(¢)	Index of real wages (1977=100)
1970	13.6	790	33.7	5,809	247.5
1971	14.9	850	36.2	5,705	243.1
1972	16.4	948	40.4	5,781	246.1
1973	19.3	1,014	43.2	5,254	223.9
1974	22.8	1,196	51.0	5,246	225.5
1975	29.6	1,482	63.1	5,007	213.3
1976	46.2	1,656	70.6	3,584	152.7
1977	100.0	2,347	100.0	2,347	100.0
1978	171.5	3,376	143.8	1,969	83.9
1979	256.5	4,122	175.6	1,607	68.5
1980	363.0	5,900	251.4	1,625	69.3
1981	800.4	8,153	347.4	1,019	43.4
1982	977.6	...	...	...	...
1983	2,102.6	19,677[b/]	838.4[b/]	936[b/]	39.9[b/]
1984	2,989.1[c/]	...	...	...	...

Source: Central Bureau of Statistics, Quarterly Digest of Statisti[illegible]ne, 1984; Industrial Statistics (various years).

a/ Old series, 1970-77, are adjusted to the new series.
b/ Estimated on the basis of sample survey of 83 manufacturing firms.
c/ Average for the first four months.

Table A-6. Product mix of traded manufactured goods, 1975, 1980 and 1981*/

SITC	DESCRIPTION OF TRADE GOODS	EXPORTS 1975 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1980 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1981 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1981 (1000 US $)	IMPORTS 1975 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1980 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1981 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1981 (1000 US $)
01	Meat and meat preparations	0.000	...	0.000	0	0.666	0.988	1.057	8751
02	Dairy products and eggs	...	0.000	0.000	0	1.165	0.785	0.342	2833
032	Fish n.e.s. and fish preparations	0.005	1.211	1.084	3649	1.850	1.159	0.146	1213
0422	Rice,glazed or polished not otherwise worked	...	...	...	...	0.021	2.050	2.180	18052
046	Meal and flour of wheat or of meslin	...	...	...	...	0.044	0.017	0.019	156
047	Meal and flour of cereals,except above	0.001	0.000	0.000	0	0.015	0.000	0.057	468
048	Cereals preparat. & starch of fruits & vegetab.	...	0.138	0.000	1	0.905	0.860	0.748	6191
052	Dried fruit	0.009	0.000	0.000	0	0.001	0.002	0.001	10
053	Fruit,preserved and fruit preparations	1.203	0.731	0.354	1191	0.017	0.015	0.093	772
055	Vegetables,roots & tubers,preserved or prepared	0.077	0.000	0.002	5	0.088	0.119	0.066	549
06	Sugar,sugar preparations and honey	...	0.000	0.000	0	2.949	1.540	0.343	2842
0713	Coffee extracts,essences,concentrates & similar	0.042	...	...	...	0.033	0.009	0.049	407
0722	Cocoa powder,unsweetened	...	...	0.011	36	...	0.000	...	...
0723	Cocoa butter and cocoa paste	47.011	29.221	5.268	17727	0.000	...	0.000	0
073	Chocolate and related food preparations	...	0.000	0.000	1	0.004	0.008	0.006	53
074	Tea and mate	...	...	...	...	0.010	0.035	0.021	172
081	Feeding-stuff for animals	0.261	0.119	0.051	171	0.231	0.679	0.464	3840
09	Miscellaneous food preparations	0.004	0.001	0.001	3	0.235	0.227	0.372	3080
11	Beverages	0.019	0.001	0.001	2	0.405	0.638	0.590	4882
122	Tobacco manufactures	0.000	0.000	...	...	0.018	0.082	0.041	343
2219	Flour and meal of oil seeds,nuts,kernels	...	0.073	0.000	1	...	...	...	...
231	Crude rubber,synth. & reclaimed(excl.SITC 2311)	...	0.306	0.002	6	0.327	0.049	0.058	482
243	Wood,shaped or simply worked	14.940	8.776	6.407	21560	0.000	0.001	...	...
251	Pulp and waste paper	0.005	...	...	...	0.003	0.000	0.001	5
263	Cotton	...	...	...	...	1.674	0.861	0.941	7791
266	Synthetic and regenerated(artificial) fibres	...	...	...	...	0.062	0.137	0.221	1834
267	Waste materials from textile fabrics(incl.rags)	...	0.001	...	...	0.338	0.450	0.407	3374
332	Petroleum products	12.292	1.364	16.193	54495	3.903	5.308	7.937	65733
4	Animal and vegetable oils and fats	0.219	0.000	0.000	2	1.404	1.272	1.352	11199
411	Animal oils and fats	...	...	...	...	0.968	0.458	0.382	3165
421	Fixed vegetable oils,soft(incl.SITC 422)	0.199	...	0.000	1	0.369	0.738	0.864	7153
431	Animal and vegetable oils and fats processed	...	...	0.000	0	0.068	0.075	0.106	881

Table A-6 (continued)

SITC	DESCRIPTION OF TRADE GOODS	EXPORTS 1975 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1980 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1981 PERCENT IN TOTAL MANUFACTURES	EXPORTS 1981 (1000 US $)	IMPORTS 1975 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1980 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1981 PERCENT IN TOTAL MANUFACTURES	IMPORTS 1981 (1000 US $)
5	Chemicals	0.385	0.667	0.135	453	17.804	21.626	18.145	150276
51	Chemicals elements and compounds	0.028	0.120	0.126	423	9.513	12.309	10.156	84110
52	Tar and chemicals from coal,petroleum,nat. gas	...	...	...	...	0.012	0.011	0.004	29
53	Dyeing,tanning and colouring materials	0.000	...	0.000	0	1.376	0.942	0.623	5161
54	Medicinal and pharmaceutical products	0.335	0.121	0.003	10	3.034	2.817	1.412	11693
55	Essential oils and perfume materials	0.019	0.426	0.005	18	0.537	0.966	0.680	5633
56	Fertilizers,manufactured	...	...	...	...	0.100	0.335	1.611	13341
57	Explosives and pyrotechnic products	...	...	...	...	0.370	0.415	0.392	3245
58	Plastic materials,regenerated cellul. & resins	0.002	0.000	...	...	1.158	1.372	1.139	9433
59	Chemical materials and products n.e.s.	0.000	0.000	0.000	1	1.804	2.460	2.129	17633
6	Manufactured goods classified by material	21.980	56.631	70.064	235786	29.391	17.047	17.337	143584
61	Leather manufactured n.e.s. & dressed fur skins	0.036	...	0.000	0	0.287	0.204	0.171	1417
62	Rubber manufactures n.e.s.	0.182	0.331	0.003	9	0.981	1.156	2.082	17242
63	Wood and cork manufactures(excl.furniture)	3.488	1.484	0.918	3089	0.080	0.037	0.073	604
64	Paper,paper board and manufactures thereof	0.002	0.003	0.003	11	3.388	2.023	1.894	15688
65	Textile yarn,fabrics,made-up articles	3.567	0.263	0.031	104	7.097	3.056	3.417	28296
66	Non-metallic mineral manufactures,n.e.s.	0.116	0.001	0.001	3	5.878	2.434	3.523	29177
67	Iron and steel	0.003	...	0.009	31	6.561	3.293	2.407	19933
68	Non-ferrous metals	17.525	54.514	69.051	232377	1.478	1.401	0.791	6548
69	Manufactures of metal,n.e.s.	0.062	0.036	0.048	161	3.642	3.442	2.980	24679
7	Machinery and transport equipment	0.677	0.101	0.008	27	32.247	41.345	41.733	345631
71	Machinery,other than electric	0.014	0.002	0.005	16	15.304	19.540	15.607	129252
72	Electrical machinery,apparatus and appliances	0.571	0.088	0.000	0	4.719	6.109	5.713	47315
73	Transport equipment	0.092	0.011	0.003	11	12.224	15.696	20.414	169064
8	Miscellaneous manufactured articles	0.869	0.657	0.420	1412	4.092	2.890	5.272	43665
81	Sanitary,plumbing,heating & lighting fixtures	0.000	...	...	...	0.502	0.213	0.322	2665
82	Furniture	0.710	0.636	0.352	1185	0.081	0.062	0.160	1327
83	Travel,goods,handbags and similar articles	0.003	0.000	...	...	0.017	0.015	0.283	2347
84	Clothing	0.045	0.000	0.011	37	0.491	0.405	1.554	12868
85	Footwear	0.039	0.000	0.001	2	0.134	0.210	0.751	6218
86	Professional,scient. & controll. instruments	0.003	0.001	0.027	91	0.814	0.643	0.810	6711
89	Miscellaneous manufactured articles,n.e.s.	0.067	0.020	0.029	97	2.051	1.342	1.392	11528

	1975	1980	1981	1975	1980	1981
TOTAL MANUFACTURES	163953	246886	336528	615024	811646	828187
TOTAL: SITC 5-8 LESS 68 a/	10471	8746	5300	505281	661552	676608
TOTAL TRADED GOODS: SITC 0-9	728165	941758	842002	787941	1128576	1273314

Note:Data and SITC descriptions refer to SITC revision 1
*/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.
a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found. It covers only items recognized as exclusively manufactured goods,i.e. with a high level of manufacturing content.
Source: UNIDO data base;Information supplied by the United Nations Statistical Office.

Table A-7. Destination of exports of manufactures by branches, 1981*/

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
01	Meat and meat preparations	0	0.00	100.01	0.00	100.01	0.00	0.00
02	Dairy products and eggs	0	28.57	71.43	71.43	0.00	0.00	0.00
032	Fish n.e.s. and fish preparations	3649	0.00	100.00	2.69	90.63	0.00	0.00
047	Meal and flour of cereals,except above	0	0.00	100.00	18.18	76.36	0.00	0.00
048	Cereals preparat. & starch of fruits & vegetab.	1	0.00	100.00	0.00	0.00	0.00	0.00
052	Dried fruit	0	42.13	56.76	0.00	56.76	0.00	1.11
053	Fruit,preserved and fruit preparations	1191	0.01	99.99	41.79	58.21	0.00	0.00
055	Vegetables,roots & tubers,preserved or prepared	[illegible]	0.62	99.38	1.03	98.35	0.00	0.00
06	Sugar,sugar preparations and honey	0	100.00	0.00	0.00	0.00	0.00	0.00
0722	Cocoa powder,unsweetened	36	0.00	100.00	0.00	100.00	0.00	0.00
0723	Cocoa butter and cocoa paste	17727	0.00	100.00	11.91	85.43	1.48	0.00
073	Chocolate and related food preparations	1	0.00	100.00	0.00	100.00	0.00	0.00
081	Feeding-stuff for animals	171	0.27	99.73	0.02	99.71	0.00	0.00
09	Miscellaneous food preparations	3	52.79	47.22	0.00	47.22	0.00	0.00
11	Beverages	2	0.00	37.08	0.00	17.82	0.00	0.00
2219	Flour and meal of oil seeds,nuts,kernels	1	0.00	100.00	0.00	100.00	0.00	0.00
231	Crude rubber,synth. & reclaimed(excl.SITC 2311)	6	0.00	100.00	0.00	100.00	0.00	0.00
243	Wood,shaped or simply worked	21560	9.24	82.35	3.35	74.28	0.00	8.41
332	Petroleum products	54495	5.30	0.31	0.00	0.31	0.00	0.00
4	Animal and vegetable oils and fats	2	32.55	67.45	4.50	62.95	0.00	0.00
421	Fixed vegetable oils,soft(incl.SITC 422)	1	43.33	56.67	5.99	50.68	0.00	0.00
431	Animal and vegetable oils and fats processed	0	0.00	100.00	0.00	100.00	0.00	0.00

Table A-7 (continued)

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
5	Chemicals	453	11.62	88.38	0.00	88.38	0.00	0.00
51	Chemicals elements and compounds	423	5.42	94.58	0.00	94.58	0.00	0.00
53	Dyeing,tanning and colouring materials	0	100.00	0.00	0.00	0.00	0.00	0.00
54	Medicinal and pharmaceutical products	10	99.01	0.99	0.00	0.99	0.00	0.00
55	Essential oils and perfume materials	18	100.00	0.00	0.00	0.00	0.00	0.00
59	Chemical materials and products n.e.s.	1	100.00	0.00	0.00	0.00	0.00	0.00
6	Manufactured goods classified by material	235786	3.12	96.85	56.34	15.47	25.02	0.03
61	Leather manufactured n.e.s. & dressed fur skins	0	100.00	0.00	0.00	0.00	0.00	0.00
62	Rubber manufactures n.e.s.	9	0.00	100.00	49.66	50.34	0.00	0.00
63	Wood and cork manufactures(excl.furniture)	3089	3.19	94.88	2.71	90.56	0.00	1.93
64	Paper,paper board and manufactures thereof	11	100.00	0.00	0.00	0.00	0.00	0.00
65	Textile yarn,fabrics,made-up articles	104	99.98	0.02	0.02	0.00	0.00	0.00
66	Non-metallic mineral manufactures,n.e.s.	3	96.00	4.00	0.00	4.00	0.00	0.00
67	Iron and steel	31	0.00	100.00	0.00	100.00	0.00	0.00
68	Non-ferrous metals	232377	3.07	96.93	57.13	14.41	25.39	0.00
69	Manufactures of metal,n.e.s.	161	6.16	93.84	0.00	92.37	0.00	0.00
7	Machinery and transport equipment	27	0.68	99.32	0.51	75.65	0.00	0.00
71	Machinery,other than electric	16	1.17	98.83	0.78	82.18	0.00	0.00
72	Electrical machinery,apparatus and appliances	0	0.00	100.01	15.97	84.04	0.00	0.00
73	Transport equipment	11	0.00	100.00	0.00	66.32	0.00	0.00
8	Miscellaneous manufactured articles	1412	4.27	95.70	9.43	86.06	0.06	0.01
82	Furniture	1185	0.76	99.24	0.00	99.24	0.00	0.00
84	Clothing	37	100.00	0.00	0.00	0.00	0.00	0.00
85	Footwear	2	0.00	100.00	0.00	100.00	0.00	0.00
86	Professional,scient. & controll. instruments	91	0.08	99.92	99.84	0.08	0.00	0.00
89	Miscellaneous manufactured articles,n.e.s.	97	14.99	84.64	43.56	38.04	0.94	0.08
	TOTAL manufactures	336528	3.67	80.48	40.53	21.89	17.81	0.56
	TOTAL: SITC 5-8 LESS 68 a/	5300	6.42	92.45	4.18	87.11	0.02	1.12
	TOTAL traded goods: SITC 0-9	842002	4.47	81.80	24.12	36.73	13.39	7.58

Note:Data and SITC descriptions refer to SITC revision 1
*/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.
a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found. It covers only items recognized as exclusively manufactured goods,i.e. with a high level of manufacturing content.
Source: UNIDO data base;Information supplied by the United Nations Statistical Office.
Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

Table A-8. Origin of imports of manufactures by branches, 1981*/

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	USA (PERCENT)	EEC (PERCENT)	JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
01	Meat and meat preparations	8751	69.73	30.27	6.51	23.15	0.00	0.00
02	Dairy products and eggs	2833	0.23	99.77	4.53	91.34	0.00	0.00
032	Fish n.e.s. and fish preparations	1213	54.36	45.64	5.30	33.37	0.00	0.00
0422	Rice,glazed or polished not otherwise worked	18052	33.05	66.95	66.40	0.54	0.00	0.00
046	Meal and flour of wheat or of meslin	156	8.68	91.32	37.86	21.43	0.00	0.00
047	Meal and flour of cereals,except above	468	0.02	99.98	99.38	0.59	0.00	0.00
048	Cereals preparat. & starch of fruits & vegetab.	6191	0.15	99.84	2.42	96.96	0.00	0.00
052	Dried fruit	10	3.37	96.63	4.89	91.74	0.00	0.00
053	Fruit,preserved and fruit preparations	772	0.57	99.43	3.99	95.44	0.00	0.00
055	Vegetables,roots & tubers,preserved or prepared	549	16.45	68.27	7.11	47.66	0.00	13.92
06	Sugar,sugar preparations and honey	2842	0.54	99.46	3.91	95.55	0.00	0.00
0713	Coffee extracts,essences,concentrates & similar	407	84.04	15.96	1.28	14.67	0.00	0.00
0723	Cocoa butter and cocoa paste	0	0.00	100.00	38.46	61.54	0.00	0.00
073	Chocolate and related food preparations	53	0.01	99.99	35.18	64.80	0.00	0.00
074	Tea and mate	172	22.48	77.52	2.33	75.18	0.00	0.00
081	Feeding-stuff for animals	3840	0.75	85.13	7.75	73.17	0.00	0.31
09	Miscellaneous food preparations	3080	0.96	99.01	3.64	71.50	0.01	0.03
11	Beverages	4882	1.90	98.10	4.49	90.60	0.00	0.00
122	Tobacco manufactures	343	0.14	99.86	13.98	85.88	0.00	0.00
231	Crude rubber,synth. & reclaimed(excl.SITC 2311)	482	0.01	65.95	10.00	55.89	0.00	34.04
251	Pulp and waste paper	5	0.00	100.00	0.00	9.24	0.00	0.00
263	Cotton	7791	52.21	47.79	47.03	0.76	0.00	0.00
266	Synthetic and regenerated(artificial) fibres	1834	0.00	100.00	0.00	99.47	0.00	0.00
267	Waste materials from textile fabrics(incl.rags)	3374	5.05	91.33	57.88	25.48	0.03	3.62
332	Petroleum products	65733	23.56	66.91	29.39	37.36	0.00	0.01
4	Animal and vegetable oils and fats	11199	4.57	95.43	44.90	50.02	0.00	0.00
411	Animal oils and fats	3165	0.28	99.72	99.44	0.27	0.00	0.00
421	Fixed vegetable oils,soft(incl.SITC 422)	7153	7.03	92.97	26.30	65.87	0.00	0.00
431	Animal and vegetable oils and fats processed	881	0.00	100.00	0.00	100.00	0.00	0.00

Table A-8 (continued)

SITC	DESCRIPTION OF TRADE GOODS	WORLD TOTAL (1000 US$)	DEVELOPING COUNTRIES (PERCENT)	DEVELOPED MARKET ECONOMIES TOTAL (PERCENT)	DEVELOPED MARKET ECONOMIES USA (PERCENT)	DEVELOPED MARKET ECONOMIES EEC (PERCENT)	DEVELOPED MARKET ECONOMIES JAPAN (PERCENT)	CENTRALLY PLANNED DEVELOPED COUNTRIES (PERCENT)
5	Chemicals	150276	38.34	61.08	14.14	39.62	0.44	0.36
51	Chemicals elements and compounds	84110	66.37	33.46	18.00	13.46	0.04	0.17
52	Tar and chemicals from coal,petroleum,nat. gas	29	0.00	100.00	0.00	100.00	0.00	0.00
53	Dyeing,tanning and colouring materials	5161	0.94	99.06	1[illegible].12	68.00	1.00	0.00
54	Medicinal and pharmaceutical products	11693	1.11	96.17	3.49	75.60	1.14	2.72
55	Essential oils and perfume materials	5538	7.46	91.04	25.12	46.79	0.08	0.73
56	Fertilizers,manufactured	13341	0.00	99.76	0.09	99.66	0.01	0.24
57	Explosives and pyrotechnic products	3245	0.30	99.70	1.01	97.25	0.00	0.00
58	Plastic materials,regenerated cellul. & resins	9433	9.79	87.05	9.69	71.02	4.50	0.00
59	Chemical materials and products n.e.s.	17633	1.46	98.52	15.01	57.01	0.08	0.01
6	Manufactured goods classified by material	143584	15.88	78.89	20.51	46.64	4.00	2.16
61	Leather manufactured n.e.s. & dressed fur skins	1417	32.16	53.06	9.46	43.54	0.00	3.81
62	Rubber manufactures n.e.s.	17242	9.87	88.95	8.77	78.36	0.68	0.99
63	Wood and cork manufactures(excl.furniture)	604	1.63	98.29	65.63	31.95	0.00	0.00
64	Paper,paper board and manufactures thereof	15688	14.44	85.01	10.14	32.13	0.13	0.00
65	Textile yarn,fabrics,made-up articles	28290	28.72	59.74	16.00	33.[illegible]	7.27	3.34
66	Non-metallic mineral manufactures,n.e.s.	29177	26.36	69.43	43.40	21.16	0.43	4.00
67	Iron and steel	19933	1.33	95.08	17.20	60.95	15.08	3.57
68	Non-ferrous metals	6548	1.17	98.69	18.89	78.81	0.18	0.06
69	Manufactures of metal,n.e.s.	24679	14.70	[illegible]3.79	17.44	59.69	1.67	0.21
7	Machinery and transport equipment	345631	6.33	[illegible].45	6.61	66.79	10.72	4.52
71	Machinery,other than electric	129252	6.26	81.93	9.97	66.38	1.61	10.80
72	Electrical machinery,apparatus and appliances	47315	10.30	86.94	18.94	52.37	4.47	0.42
73	Transport equipment	169064	5.28	93.85	0.60	71.14	19.45	0.86
8	Miscellaneous manufactured articles	43665	21.74	66.98	8.55	48.84	1.74	0.58
81	Sanitary,plumbing,heating & lightning fixtures	2665	22.59	75.91	14.44	54.10	0.06	0.23
82	Furniture	1327	0.62	99.23	34.56	58.27	0.04	0.02
83	Travel goods,handbags and similar articles	2347	25.23	30.99	3.34	24.81	2.78	0.01
84	Clothing	12868	38.94	43.04	5.14	36.78	0.84	0.00
85	Footwear	6218	19.30	71.95	5.45	65.92	0.32	3.07
86	Professional,scient. & controll. instruments	6711	2.16	97.05	4.19	56.92	1.81	0.11
89	Miscellaneous manufactured articles,n.e.s.	11528	16.77	75.08	13.27	51.18	3.85	0.43
	TOTAL manufactures	828187	17.56	77.79	14.68	52.73	5.34	2.40
	TOTAL: SITC 5-8 LESS 68 a/	676608	16.51	78.86	11.24	55.22	6.54	2.88
	TOTAL traded goods: SITC 0-9	1273314	41.69	55.15	11.06	35.92	3.52	1.58

Note:Data and SITC descriptions refer to SITC revision 1
*/ This table is based on the definition of trade in manufactures covering a list of 148 specifically identified SITC 3-digit or 4-digit codes comprising a wide range of processing stages of manufactured goods.
a/ Definition of trade in manufactures SITC 5-8 less 68 is one of the most often found. It covers only items recognized as exclusively manufactured goods,i.e. with a high level of manufacturing content.
Source: UNIDO data base;Information supplied by the United Nations Statistical Office.
Note: Percentages may not add to 100.0 due to the fact that countries report trade to/from "unspecified areas".

Table A-9. Sectoral distribution of manufacturing firms monitored by State Enterprises Commission in 1985
(number of firms)

	Statutory corporations	Acquired	Joint ventures[a/]
Food	4	...	...
Beverages	2	2	2
Tobacco and matches	...	...	3
Wood and paper	1	3	2
Textiles, footwear, leather	2	8	3
Chemicals, pharmaceuticals, detergents	2	4	1
Rubber products	-	1	-
Metals	2	1	3
Electrical products	1	2	2
Transport equipment[b/]	1	4	3
Non-metallic mineral products	3	...	...
Total	18	25	20

Source: World Bank, Ghana Industrial Policy, Performance and Recovery, Report No. 5716-GH, 1985, p.70.

a/ Does not include all firms of which the Government owns shares.

b/ Includes State Boatyards; the rest are vehicle assembly.

c/ Includes Ghana Battery Co. and Tema Food Complex Corp. in addition to 16 GIHOC enterprises. Excludes Sugar Products.

Table A-10. Fixed domestic capital formation in manufacturing classified by type of ownership, 1970-81
(Thousand ¢edis)

Ownership	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
State	29,785	44,649	43,115	60,654	46,264	93,025	72,855	175,225	162,171	163,377	274,630	287,719
Per cent of Total	12 2	14.4	13.7	16.6	15.0	19.5	12.4	29.5	27.7	27.0	25.6	21.8
Joint State/Private	30,568	33,611	52,008	77,070	59,686	85,003	148,117	116,045	127,977	154,806	211,757	260,305
Per cent of Total	12.5	10.9	16.5	21.1	19.3	17.8	25.2	19.5	21.8	25.7	19.8	19.8
Private	184,585	230,946	219,127	227,882	203,304	299,515	366,094	303,527	296,365	285,350	584,713	769,976
Per cent of Total	75.3	74.7	69.7	62.3	65.7	62.7	62.4	51.0	50.5	47.3	54.6	58.4
Total	244,938	309,206	314,250	365,606	309,254	477,543	587,066	594,800	586,513	603,533	1,071,100	1,318,000

Source: Central Bureau of Statistics.

Table A-11. Small-scale industries registered: number, investment and employment, 1978-82

Sector	Number of companies					Investment in building and machinery ('000 Cedis)					Number of employees				
	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982	1978	1979	1980	1981	1982
Textiles	17	13	22	66	45	90	71	283	778	732	135	119	207	666	442
Garment	47	24	78	137	44	348	236	1,058	2,471	1,227	399	216	747	1,322	905
Metals	19	4	8	28	130	136	24	212	612	3,202	117	26	118	191	779
Electricals	7	5	6	16	23	54	54	91	337	672	84	56	69	76	174
Food processing	24	15	25	73	62	175	127	404	1,935	3,257	200	134	214	809	848
Leather	-	2	23	31	11	-	23	244	318	166	-	22	262	330	80
Cosmetics	9	2	27	66	79	23	3	162	414	850	50	19	242	602	688
Non-metallic mineral products	12	6	11	11	1	139	67	199	337	28	126	70	119	72	6
Chemicals	8	2	5	29	134	43	28	78	544	2,991	90	42	36	369	1,442
Wood processing	10	7	119	32	42	90	125	379	636	1,025	108	58	200	345	990
Miscellaneous	2	8	11	18	47	3	77	217	557	2,614	14	81	129	212	571
Total	155	88	235	508	618	1,101	835	3,327	8,939	16,764	1,323	843	2,343	4,994	6,125

Source: Ministry of Industries, Science and Technology.

Appendix B

Core public investment programme, selected projects, 1986-88
(Million Cedis)

	Total programme project cost	Foreign financing committed/under negotiation
A. Agriculture		
1. Crop Services	860	...
2. Veterinary Services	270	...
3. Maize Support	760	...
4. Cotton Development	675	...
5. Institutional Strengthening	260	...
6. Ghana Rubber Estates Ltd.	300	...
B. Energy		
(i) Hydrocarbon		
7. Saltpond	2,850	848
8. North and South Tano	14,250	1,425
9. Prelim. Activities and Seismic Surveys	342	...
10. Cape There Points	1,710	...
11. Exploration Promotion	171	...
12. Voltaian Basin Studies	114	...
(ii) Power Distribution		
13. Volta Region Electrification	1,538	...
14. Brong Ahafo Electrification	1,140	...
15. 11 kV Rural Electrification	570	490
16. Mini-Hydro Rural Electrification	160	43
C. Industry		
17. Bonsa Tyre Company	227	...
18. GIHOC Pharmaceuticals	705	530
19. GIHOC Fibre Products	1,890	...
D. Roads and Highways		
20. Daboase-Takoradi	900	...
21. Tema-Aflao	2,434	...
22. Yamoransa-Anwiankwanta	992	...
23. Yapei-Morno	1,454	...
24. Kintampo-Morno	1,140	...
E. Railways		
25. On-going Rehabilitation	941	485
26. Technical Assistance	188	...
27. 150 Wagon Replacement	428	...

	Total programme project cost	Foreign financing committed/under negotiation
F. Internal Telecommunications		
28. Rehabilitation of Underground Cable	1,307	...
G. Water Supply		
29. Urban System Rehabilitation	2,247	...
30. Completion of On-going Urban Systems	5,080	...
31. Rural Water Supply	833	...
H. Health		
32. Primary Health Care	1,136	...
33. Teaching Hospital Rehabilitation	570	...
34. Regional Hospital Rehabilitation	4,109	...
35. District Hospital Rehabilitation		
36. Health Centres	1,140	...
37. Institutional Strengthening	171	
I. Education		
38. Junior Secondary Schools	171	...
39. Functional Literacy and Vocational Training	114	...
40. Conversion of Deboardenized Hostels to Classrooms	570	...
41. Production of Textbooks	312	...

Source: Government of Ghana, Progress of the ERP 1980 and Policy Framework 1986-88. Report by the Government of Ghana to the Consultative Group for Ghana, Paris, November 1985, pp.53-54.

Appendix C

Manufacturing projects seeking external assistance [a/]

Project number	Project title and product	Capacity	Total Invest. (million US$)	Foreign contribution sought
GHA/029/V/86-06	Manufacture of furniture and wood processing (expansion)	Furniture: 800 pieces per year	0.9	Equity participation Loans Access to foreign markets
GHA/030/V/86-06	Iron and steel casting	0.75 - 6 t/hour	...	Licence and know-how Access to foreign markets
GHA/031/V/86-06	Panelled doors	...	...	Access to foreign markets Technical assistance
GHA/032/V/86-06	Manufacture of aluminium cans	5 million/year	4.1	Equity participation Loans Licence and know-how Access to foreign markets
GHA/029/V/86-07	Small-scale pilot multiple project - bricks and tiles	5 million solid/hollow bricks and 10 million roofing tiles/year	2.3	Equity participation Loans Access to foreign markets Technical expertise Marketing expertise
GHA/028/V/84-10	Mining and processing of rock talc - pulverized talc, talcum powder	3,000 tons/year 750,000 packets (200 grams) 286,000 packets (350 grams)	5.5	Joint venture Loans Marketing expertise
GHA/027/V/84-12	Knocked-down furniture for export and living room furniture for local market	Knocked-down furniture - 6,000 cubic metres/year Living room furniture - 300 cubic metres/year	1.0	Joint venture Equipment supply Access to foreign markets Technical expertise Management expertise
GHA/026/V/84-05	Brick and roofing tile manufacture at Ashanti	6 million clay bricks and roofing tiles/year	5.9	Equity participation Loans Licensing Sale of technology Management expertise
GHA/025/V/84-05	Brick and tile manufacture at Asokwa	20 million bricks and tiles/year	...	Equity participation Loans Licensing Sale of technology Access to foreign markets Training expertise
GHA/024/V/84-05	Knocked-down furniture	Living room sets 450/year Dining room sets 450/year Bedroom sets 450/year Wall units 200/year	4.5	Equity participation Loans Licensing Access to foreign markets
GHA/023/V/83-11	Tuna and shrimp fishing project	Skipjack and yellowfish tuna, shrimps and other fish - 7,920 tonnes/year	17.5	Loans Access to foreign markets

a/ This list includes industrial projects in Ghana for which foreign co-operation, such as joint venture or other partnerships, acquisition of technology, management expertise and marketing assistance, is sought. Enterprises interested in the possibility of participating in any of these projects can obtain more detailed information, including the name and address of the sponsor, from UNIDO Investment Promotion Service. This information usually takes the form of a standard industrial investment project questionnaire. Copies of studies, when these are available, may then be obtained from the project sponsor. UNIDO does not accept responsibility for accuracy or completeness.

APPENDIX D

THE COMPLETED AND OPERATIONAL PROJECTS OF UNIDO

The completed technical co-operation projects of UNIDO

Backstopping Responsibility	All.Acc.Code (old S.A.C.)	Project Number	Project Title
IO/INFR	(31.1.00)	RP/GHA/73/001	Administration of certification marking scheme
IO/INFR	(31.4.04)	RP/GHA/74/001	Financing and marketing of small-scale industries
IO/INFR	(31.4.04)	RP/GHA/74/003	Administration of certification marking schemes
IO/INFR	(31.3.A)	IS/GHA/75/017	Assistance in applied industrial research and development
IO/INFR	(31.3.D)	DP/GHA/76/007	Small-scale industries development
IO/INFR	(31.3.D)	IS/GHA/74/005	Assistance in the field of small-scale industries to the Ministry of Industry
IO/INFR	(31.3.D)	SI/GHA/74/805	Assistance in the field of small-scale industries to the Ministry of Industry
IO/INFR	(31.3.I)	IS/GHA/74/037	Advisory mission on export processing zone
IO/INFR	(31.3.I)	SI/GHA/74/837	Advisory mission on export processing zone
IO/FCTY	(31.3.02)	DP/GHA/72/024	Assistance to Ghana Industrial Holding Corporation, management adviser to the Boatyard Division
IO/FCTY	(31.3.02)	DU/GHA/72/004	Management Development and Productivity Institute (Executing agency: ILO)
IO/FCTY	(31.4.A)	SI/GHA/82/801	Assistance to GIHOC Brick and Tile Company
IO/FCTY	(31.4.B)	DP/GHA/69/528	Assistance to Ghana Industrial Holding Corporation (GIHOC), phase I
IO/FCTY	(31.4.B)	DP/GHA/74/002	Assitance to Ghana Industrial Holding Corporation (GIHOC), phase II
IO/TRNG	(31.5.B)	RP/GHA/76/003	Industrial training
IO/TRNG	(31.5.B)	RP/GHA/76/004	Industrial training
IO/TRNG	(31.5.B)	RP/GHA/77/002	Fourth General Course on Development Banking, Bangalore, India, 22 August to 10 September 1977

Appendix D (continued)

Backstopping Responsibility	All.Acc.Code (old S.A.C.)	Project Number	Project Title
IO/TRNG	(31.5.B)	RP/GHA/78/003	Industrial training, technology and testing of construction material
IO/TRNG	(31.5.B)	RP/GHA/79/001	Industrial training manager
IO/TRNG	(31.5.B)	RP/GHA/80/001	Development banking course
IO/TRNG	(31.5.B)	RP/GHA/84/001	Training in legal metrology
IO/AGRO	(30.6.02)	DP/GHA/74/031	Assistance to Tema Food Complex Corporation
IO/AGRO	(31.7.B)	DP/GHA/78/007	Assistance to Loyalty Industries Ltd.
IO/CHEM	(30.4.01)	DP/GHA/74/013	Pilot unit for massive production of charcoal, wood spirit and other by-products
IO/CHEM	(30.4.02)	DP/GHA/72/006	Assistance to Ghana Industrial Holding Corporation, Pharmaceutical Division
IO/CHEM	(30.4.02)	DP/GHA/74/030	Assistance to GIHOC Pharmaceutical Division, phase II
IO/CHEM	(32.1.B)	IS/GHA/74/006	Assistance to the Ghana Building and Road Research Institute
IO/CHEM	(32.1.B)	SI/GHA/74/806	Assistance to the Ghana Building and Road Research Institute
IO/CHEM	(32.1.B)	SI/GHA/80/801	Development of the brick and tile industry
IO/CHEM	(32.1.D)	DP/GHA/77/006	Assistance to the GIHOC Pharmaceutical Division, phase II
IO/CHEM	(32.1.D)	DU/GHA/74/013	Charcoal production and utilization, phase II (Executing agency: FAO)
IO/CHEM	(32.1.D)	SI/GHA/75/818	Assistance to GIHOC Pharmaceutical Division, phase II
IO/CHEM	(32.1.D)	TF/GHA/77/003	Assistance to the Ghana Industrial Holding Corporation (GIHOC), phase II
IO/CHEM	(32.1.D)	TS/GHA/78/002	Assistance to GIHOC Pharmaceutical Division, phase II, adviser in vaccine production
IO/IT/CHEM/PH	J13422	SI/GHA/82/802	Technical assistance to GIHOC in the field of pharmaceuticals

Appendix D (continued)

Backstopping Responsibility	All.Acc.Code (old S.A.C.)	Project Number	Project Title
IO/COOP	(31.1.A)	TS/GHA/76/001	Policy level consultations and negotiations of industrial investments
IS/TEC	(62.4.Z)	SI/GHA/78/801	Preparatory assistance for the development of industrial management and technological capabilities in Ghana

UNIDO's approved and/or operational technical co-operation projects

Backstopping Responsibility	All.Acc.Code	Project Number	Project Title
IO/IIS/INFR	J12104	UC/GHA/85/248	Assistance in the organization of the First Industry and Technology Fair, 'Indutech 86'
IO/IIS/PLAN	J12413	DP/GHA/82/030*	Industrial planning and programming
IO/IIS/PLAN	J12415	DP/GHA/86/001**	Strengthening industrial planning and programming in support of the Government's industrial sector adjustment programme
IO/IT/AGRO	J13101	SI/GHA/86/820	Technical assistance to the Kumasi Furniture and Joinery Ltd.
IO/IT/CHEM	J13424	SI/GHA/86/857	Technical assistance for a petroleum products pricing study

* Large-scale project (= total allotment $150,000 or above).
** Total allotment $1 million or above.

Appendix E

Leading industrial companies, 1986

The following are some of the largest companies in terms of either capital investment or of employment.

Ghana Industrial Holding Corporation: groups 18 statutory corporations.

Achimota Brewery Co Ltd: POB 114, Achimotoa, Accra; f. 1973 as Tata Brewery, beer and soft drinks.

Ashanti Goldfields Corporation (Ghana) Ltd: POB 10, Obuasi; f. 1897; gold mining; leases mining and timber concessions from the government which holds 55 per cent of the shares; the balance is held by Lonrho PLC.

BP Ghana Ltd: 95 Kojo Thompson Rd, POB 553, Accra; f. 1965; shares held by BP Africa Ltd, National Investment Bank, National Trust Holding Co Ltd; distribution of petroleum products, fuelling marine vessels at Tema and Takoradi, and aircraft at Kotoka International Airport, Accra.

The Cocoa Processing Co (GCMB) Ltd: Effia Junction Industrial Estate, POB 218, Takoradi; f. 1964; cap. C2m.; operates under the control of the Ghana Cocoa Marketing Board to process high grade cocoa products for export.

Ghana Bauxite Co Ltd: POB 1, Awaso; 55 per cent government shareholding, formerly British Aluminium Co Ltd; mining of bauxite at Awaso with loading facilities at Takoradi.

Ghana Consolidated Diamonds Ltd: formerly Consolidated African Selection Trust; operates diamond mine at Akwatia; 100 per cent State-owned.

Ghanaian-Italian Petroleum Co (Ghaip): POB 599, Tema telex 2011; f. 1963; sole oil refinery in Ghana; State-controlled since 1977.

Lever Bros Ghana Ltd: POB 1648, Accra; mfrs of household and toilet soaps, non-soap detergents, scourers, toothpaste, margarine and other edible fats.

Total Ghana Ltd: POB 2537, House No. C275/3, Ring Rd, Central Accra; f. 1960; cap. C1,200,000; subsidiary of Compagnie Française des Pétroles, Paris; distribution of petroleum products, including liquefied petroleum gas.

UAC of Ghana Ltd: POB 64, Liberty Ave, Accra; f. 1955 as United Africa Company of Ghana Ltd; comprises 15 divisions and associated companies; subsidiary of UAC International Ltd, London; agricultural, industrial, specialized merchandising, distributive and service enterprises.

Volta Aluminium Co Ltd (VALCO): POB 625, Tema; owned by Kaiser Aluminium and Chemical Corporation (90 per cent) and the Reynolds Metal Co (10 per cent); operates an aluminium smelter at Tema (capacity of 20,000 tons).

Source: Africa South of the Sahara, 1987, Europa Publications Company, Ltd., 1986.

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