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18708

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.../REG
26 September 1990

Internal working draft

Subject to revision, editorial completion and finalization

INDUSTRIAL DEVELOPMENT REVIEW SERIES

ETHIOPIA

Prepared by

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1991/2/26*

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BASIC INDICATORS I
The Economy

GD _P (1986/87)	:	Birr8,907.7 million (\$4,302.8 million)							
Annual growth rate of GDP (per cent)	:	<u>1975-7E</u>	<u>1979-81</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	:	0.4	4.4	1.2	5.3	-3.6	-7.0	6.7	8.0
Expenditure on GDP	:								
	:					<u>1974/75</u>	<u>1986/87</u> (per cent)		
	:	Gross domestic savings	7.5	2.0			92.5	98.0	
	:	Consumption					14.5		
	:	Investment		10.4			3.0	12.5	
	:	Net imports							
Structure of production (per cent)	:								
	:					<u>1974/75</u>	<u>1986/87</u>		
	:	Agriculture				52.7	43.3		
	:	Industry		14.8		17.9			
	:	Manufacturing		5.5		8.4			
	:	Handicrafts & SSI				4.1	3.9		
	:	Services		32.5		38.8			
Population (1987)	:	45.95 million							
Growth rate (1984)	:	2.9 per cent per annum							
GNP per capita (1987)	:	5130							
Inflation ^{a/} (1963=100)	:	<u>1975</u>	<u>1980</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	:	128	215	266	289	287	297	319	317
Exchange rate	:	Fixed at Birr2.07=\$1c since 1974							

a/ Retail price index for Addis Ababa.

BASIC INDICATORS II
Raw material resources

Resources

	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>
Agricultural production index (av. 1979-81=100)	107	102	89	96	106	103	106
Food crops ('000 tonnes, 1987)	: Maize (1,788), teff (1,112), sorghum (1,092), wheat (826), pulses (585), oilseeds (92)						
Cash crops ('000 tonnes, 1985)	: Sugara/ (1,600), coffeeb/ (180), cotton (75), pepper (2.5)						
Livestock ('000 head, 1985)	: Cattle (20,434), sheep (10,488), goats (6,323), horses (1,208)						
Fish landings (1986)	: 5,000 tonnes						
Estimated sustainable yield	: 66,000 tonnes						
Mining, precious metals	: Gold (728 kg), platinum (1,435 g)						
Mining, others (cu m, 1988)	: Building stone (723,000), sand (617,000), salt (175,777 tons), pumice (143,442), limestone (97,413), gypsum (1,276), kaolin (572)						
Identified mineral resources	: Bentonite, copper and zinc, diatomite, potash, soda ash, tantalite						
Electricity production (million kWh, 1986)	: Thermal (170), hydroelectric (828)						

a/ 1986

b/ 1989 forecast

BASIC INDICATORS III
Foreign trade and balance of payments

Exports

Total value (1986/87)	:	Birr794.8 million (\$387 million)
Principal exports (Birr million, 1986/87)	:	Coffee (524), hides and skins (108), chat (29), petroleum products (28), live animals (16)
Main destinations (per cent, 1986/87)	:	Federal Republic of Germany (29.1), USA (12.8), Netherlands (8.8), Japan (8.6)

Imports

Total value (1986/87)	:	Birr2,223.9 million (\$1,074.3 million)
Principal imports (Birr million, 1985/86)	:	Road motor vehicles (339), machinery and aircraft (328), food and live animals (320), metal and metal wares (156), crude petroleum (163), chemicals (115)
Main origins (per cent, 1985/86)	:	USA (17), USSR (16.1), Federal Republic of Germany (10.7), Italy (9.7)

Current account (\$ million)	:	<u>1981</u> <u>1982</u> <u>1983</u> <u>1984</u> <u>1985</u> <u>1986</u>
		-250 -195 -170 -130 106 327

Gross international reserves (November 1989): \$40.3 million

Total external public disbursed debt (1988)	:	\$2,790 million
as per cent of GNP	:	54.0
Debt service (1988)	:	\$267 million
as per cent of exports	:	39.2

BASIC INDICATORS IV
The manufacturing sectors/

MVA (1986/87)	:	Birr804.1 million (\$388.5 million)							
MVA <u>per capita</u>	:	Birr17.5 (\$8.45)							
Employment in manufacturing (1985/86) as per cent of economically active population:	:	90,845							
	:	0.5 per cent							
MVA per employee (1985/86)	:	Birr7,953 (\$3,842)							
Annual real growth rate of MVA (per cent)	:	<u>1975-78</u>	<u>1979-81</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>
	:	-0.3	8.0	4.6	7.3	3.8	1.6	5.3	5.9
Composition of MVA by branch (per cent share)	:						<u>1976/77</u>	<u>1985/86</u>	
		Food, beverages & tobacco					39.7	42.9	
		Textiles					30.8	20.0	
		Leather & leather products	6.5				4.0		
		Wood & wood products					3.4	3.0	
		Paper & printing					4.3	8.0	
		Chemicals					8.6	12.0	
		Non-metallic mineral products					2.4	3.1	
		Metal products					4.2	6.6	
Composition of MVA by end use/ (per cent share, 1988)	:						<u>1988</u>		
		Consumer goods					67.7		
		Consumer durables					3.8		
		Intermediate goods					23.5		
		Engineering products					0.1		
		Service rendering					5.0		

a/ Large and medium-scale enterprises only.
b/ Ministry of Industry supervised industries only.

BASIC INDICATORS V
Trade in manufactures and the role of small-scale industries

Exports of manufactures

Total export values/ (Birr million)	:	<u>1985</u> 90	<u>1986</u> 139	<u>1987</u> 185	<u>1988</u> 145	<u>1989</u> 321
As per cent of total exports/	:	<u>1979/80</u> 8.8		<u>1986/87</u> 19.8		
Exports as per cent of industrial production/	:	<u>1984</u> 5.1	<u>1988</u> 7.4			
Principal manufactured exports/ (Birr million, 1989)	:	Hides and skins (93), textile products (24), sugar and molasses (14), pepper extracts (7), finished leather and leather products (3)				

Imports of manufactures

Total import values/ (Birr million)	:	<u>1985</u> 1,035	<u>1986</u> 1,291	<u>1987</u> 1,612		
As per cent of total imports	:	<u>1979/80</u> 67.8		<u>1986/87</u> 72.1		
Principal manufactured imports (Birr million, 1987)	:	Road motor vehicles (339), machinery and aircraft (328), metal and metal ware (156), chemicals (115), telecommunications apparatus (75), medicines and pharmaceuticals (67)				

Handicrafts and small-scale industry

Number of enterprises 1984/85	:	Handicrafts (15,433) Small-scale industry (7,684)
MVA (Million Birr, 1984/85)	:	handicrafts (21.5) Small-scale industry (210.7)
Employment 1984/85	:	Handicrafts (40,000) Small-scale industry (36,846)

SUMMARY

In March 1990, the government of the People's Democratic Republic of Ethiopia announced a radical package of reforms that would dismember the central planning machinery that has managed the economy since 1976 and allow market forces to allocate resources within the economy. This abrupt change in economic policy was, the government stated, a response to the deterioration of Ethiopia's economic performance over the past decade. Real growth rates averaged just 1.7 per cent from FY1981 to FY1987 and may have been lower still or negative for the period thereafter. This is far behind the estimated 2.9 per cent annual increase in population. Consequently, per capita incomes have fallen. According to the World Bank GNP per capita stood at \$130 in 1987, making Ethiopia the poorest country in Africa by a wide margin.

Agriculture, traditionally the mainstay of the economy, accounting for over 40 per cent of GDP and 90 per cent of exports, has performed abysmally. Value added has fallen by an average of 0.4 per cent per year from 1980/81 to 1986/87. Output of grains has failed to keep pace with population growth necessitating substantial food imports. Even so, the average per capita daily calorific intake has fallen by nearly 5 per cent over the last twenty years while the same indicator has increased significantly for almost all other low income countries. Droughts in the 1981-82, 1984-85 and 1987-89 have certainly played a major role in the decline in agricultural value added, but there is also an underlying trend of declining per capita agricultural production. This may be ascribed to economic policies: the erosion of incentives as real prices for agricultural products declined and the concentration of resources in the development of state farms which have failed to yield an appreciable return.

Industry has fared better, recording an average 4.8 per cent increase in value added per annum from 1980/81 to 1986/87. However, gross production figures for the IPEs - representing over 90 per cent of industrial output - indicate that growth rates have slowed from around 8 per cent in the early 1980s to just 2.8 per cent in 1988 as investment tailed off and supply constraints began to tell.

Low and declining real incomes, shortages of agricultural inputs and consumer goods have reduced the propensity to save in the private sector. Public sector saving has been negative for the 1980s as a whole, even though government revenue rose from 21.7 per cent of GDP in FY1981 to 28.8 per cent of GDP in FY1987 and fiscal management has been conservative. Total domestic savings have dropped from 7.5 per cent of GDP in FY1975 to 2 per cent in FY1987, averaging just 1.7 per cent over the FY1983-FY1987 period. What is more the share of government expenditure allocated to development activities has fallen owing to substantial increases in defence expenditure. Expenditure on general services - which includes defence - has increased at a rate of 19 per cent each year from

1974 to 1988 and accounted for over 50 per cent of the government budget by the late 1980s. While the level of investment has increased from about 10 per cent of GDP in the late 1970s to around 11.5 per cent in the early 1980s, reaching 14 per cent of GDP in FY1987, this is still considerably lower than the levels seen in other developing countries. Furthermore, owing to the limited domestic financial resources available, about 70 per cent of new investment has been financed by foreign borrowing resulting in a massive increase in Ethiopia's external debt burden. This has more than doubled from \$1,239 million in 1982 to \$2,978 million in 1988 - the equivalent 54 per cent of GNP. Ethiopia's debt servicing obligations have increased at an even faster rate, rising from \$74 million in 1982 to \$267 million in 1988, 39.2 per cent of export earnings as compared with 13 per cent in 1982.

Meanwhile, Ethiopia's chronic trade deficit has widened. Although the value of exports increased at an annual average rate of 4.7 per cent from FY1975 to FY1987, imports increased at a rate of 10.4 per cent over the same period. Despite attempts at export diversification, the economy has become increasingly dependent on coffee as a source of foreign exchange. Output of other agricultural exports has tended to stagnate or been diverted to the domestic market, even coffee production has fallen during the 1980s. In the three years to FY1974, coffee accounted for less than 40 per cent of export earnings; by the FY1984-FY1987, this proportion had risen to 65 per cent, with a peak of 72 per cent in FY1986. As a result the collapse of world coffee prices in July 1989 following the abolition of the International Coffee Organisation (ICO) quota system, cut total export earnings by as much as 25 per cent. Fortunately Ethiopia's current account position has been cushioned from the effects of a deteriorating balance of trade by exports of services and net-transfers, particularly aid-flows during drought years, such as 1981, 1985 and 1986. Yet these inflows have dropped sharply once the immediate threat of famine has passed. In the past the government has financed the current account deficit by drawing on reserves and foreign borrowing. By November 1989, Ethiopia's reserves had dropped to \$40 million, sufficient to provide import cover for about four weeks.

Peasant agriculture is the key to Ethiopia's economic recovery. To increase production, however, incentives must also be restored to encourage investment and production. The first steps along this line were taken in November 1987, when the government reduced compulsory grain purchases and increased producer prices by around 10 per cent. Following the collapse of world coffee prices, the government increased coffee producer prices by about 130 per cent in October 1989. Then in March 1990 the government announced that price controls on grain would be reduced and the Agricultural Marketing Corporations' monopoly on domestic trade in cereals would be abolished. This is expected to increase producer prices significantly, providing an incentive for farmers to step up

production. Hopefully this measure - together with the recognition of peasants' usufruct rights to the land and rights of inheritance - will have the desired effect. But this is by no means certain. If consumer goods are not available an increase in income will be meaningless to farmers. They could respond by reducing production to maintain their output at subsistence levels. Moreover, without an increase in fertiliser imports, farmers will be unable to increase production. Investment is also needed in Ethiopia's sparse rural infrastructure if agricultural surpluses are to be mobilised effectively.

Private sector participation is also seen as the key to the revitalisation of the industrial sector. Measures were introduced to facilitate private sector investment in small-scale industry in mid-1989, prompting an influx of applications from potential investors. Further incentives were announced in May 1990 with the promulgation of a new investment code. This legislation removes the ceiling on domestic private investment altogether, allows wide forms of capital association and joint ventures with foreign partners. All restrictions on the field of private sector investment have also been removed, save for a narrow range of sensitive activities. This will introduce a spirit of competition into the industrial sector, previously characterised by quasi-monopolies and monopolies. Competition will certainly benefit consumers, both by forcing down prices and closing the "supply-gap" which has offered large scarcity rents to producers in the private sector.

Further reforms are expected. Discriminatory interest rates will be abolished, along with the public sector's preferential access to credit. So will the discriminatory tax regime that has burdened private investors with a marginal rate of taxation of 85 per cent at the top of the scale. This will greatly facilitate private sector investment which has, in the past, tended to rely on personal savings to finance new projects. Furthermore, the abolition of the state's monopoly on the marketing of agricultural products will enable private investors to purchase raw-materials that have generally been short supply. Private sector factories will soon be able to bid for their inputs in fair competition with the large public sector enterprises.

Public enterprises - accounting for over 90 per cent of manufacturing value added and output - will also undergo major changes in the near future. Management autonomy has been promised, though exactly how this will be achieved is unclear. Certainly, direct Ministerial intervention in the day-to-day affairs of Industrial Public Enterprises (IPEs) will cease, as will Ministerial scrutiny of budgets, manpower and input requests, and investment decisions. At one level it may imply that the Corporation structure, in place since 1977, will be retained, with the Corporation's management supervising the activities of each enterprise. More likely, however, will be the dismemberment of the

Corporation structure allowing plant level management to pursue its own development strategy. These enterprises will be able to compete freely for their inputs, determine their production lines, introduce new methods of management and incentives. Such managerial reform will be a lengthy process, requiring technical assistance, often on a plant by plant basis. Decision making will be facilitated by the removal of secondary social objectives from the enterprises' corporate goals; the government has made it clear that profitability, productivity and economic efficiency will be the sole criteria for assessing an enterprises' viability. IPEs will no longer be shielded from private sector competition by licensing restrictions, preferential access to credit and raw materials - even their priority allocation of foreign exchange may be lost in the near future. Those enterprises that are unable to perform in the new competitive environment have been threatened with privatisation or liquidation.

For the time being price controls will remain in place for many industrial products, but market pricing will be introduced progressively as monopolies are eroded by new investment. Within a couple of years, it is hoped that only the prices of necessities will be controlled. This will facilitate a far more efficient allocation of resources. So will the reduction and unification of protective tariffs. Competition between domestic and imported manufactures will also promote greater efficiency within the industrial sector, forcing the industry to follow the line of its comparative advantage.

Formerly, the industrial development strategy emphasised import substitution, catering to the basic needs of the population. In view of Ethiopia's precarious balance of payments position, however, export promotion has been identified as one of the government's priorities since the mid-1980s. Considerable effort has been made to identify suitable export products and penetrate new markets. This policy has borne fruit as the value of manufactured exports increased from Birr83.7 million in 1980 to Birr157.3 million in 1987 and the range of export products has broadened slightly. Moreover, manufactures as a share of total exports have increased from 8.8 per cent to 19.8 per cent over the same period. The prospects for further expansion of manufactured exports seem bright. Alongside the development of export markets for products originally intended for the domestic market, the government is investigating a proposal to establish a Export Processing Zone to attract export oriented industries financed by foreign capital.

Exports would be given a considerable boost by the devaluation of the Birr, which fixed against the US Dollar since 1974, has appreciated in real terms against the currencies of major trading partners. The World Bank considers the official exchange rate of Birr2.07=\$1 to overvalue the Birr by at least 100 per cent. As a result, exporters receive only a fraction of the world market price

at a market exchange rate. IPE exports have frequently had to be subsidised since the export price in Birr is below the level on the domestic market, while private sector exports have effectively been discouraged. Devaluation would provide a considerable incentive for exporters, but it would also hurt the pockets of consumers and raise costs in those sectors that depend heavily on imported inputs. For this reason the government favours a stepped devaluation of the Birr, which would have to be closely monitored to reduce its impact on inflation. Fiscal reforms will also be needed to ensure that the devaluation does not widen the budget deficit.

Introduction of a market system is likely to have implications for the structure of Ethiopian industry. In the past, priority has been given to the production of basic necessities, often through import substitution activities. More recently, the government has sought to broaden the industrial base by developing basic-resource based industries and engineering activities. Progress has been limited. In 1985/86, food, beverages and textiles still accounted for 58.4 per cent of MVA. A few enterprises have been established producing non-metallic minerals have been established, though this sector is dominated by the cement production. Other than the oil refinery, the chemicals sector continues to be oriented towards the production of final goods, though several resource based projects are in the pipeline. The weakest link in Ethiopia's industrial structure is the engineering sector. It was only in 1988 that the first large scale engineering plant, the Akaki Spare Parts Factory, was established. In the 1980s a number of assembly plants were commissioned with the intention of phased development of manufacturing operations but progress on this front has been slow. Consequently, Ethiopia is almost entirely dependent on imports for its machinery and for a large proportion of its spare parts. It is unlikely that private sector industry will develop along the lines mapped out by central planners. In the short term at least, their priority is likely to be consumer oriented activities, where the level of investment required is limited and the profits large owing to scarcity rents. If the industrial structure is to evolve as the government intended in its Ten Year Perspective Plan - and clearly it needs to - indicative planning will be needed. So will government participation in the sector through investment in projects that will be unattractive to private investors on account of their long maturity or scale.

Structural adjustments along these lines will not be effective unless they are accompanied by increased investment. Much of Ethiopia's industrial infrastructure -not to mention its transport and communications and social infrastructure - has deteriorated in recent years owing to inadequate replacement and maintenance. The limited resources made available during the 1980s have been channelled into an expensive new generation of industrial enterprises. IPES are, for the most part, unable to finance rehabilitation, they are already saddled with massive debts to

domestic banks which they are frequently unable to service. Privatisation in the form of equity flotations, joint ventures and asset sales may provide funds in selected cases. Many other enterprises will need external assistance, either from the government or the donor community. Unfortunately, the government is also strapped for cash and donors - other than Eastern European countries, which can no longer be regarded as dependable sources of development assistance - have proved reluctant to provide long-term investment capital. This is as true for the economy as a whole as it is for the industrial sector. Development assistance to Ethiopia has trailed far behind the levels accorded to other low-income African countries, amounting to just \$14 per capita in 1987. Donors have been impressed by the reform programme and commitments are likely to rise in the near future, but most of the funds will ear-marked for agricultural development. Since donor funding be limited it is essential that the government target assistance to those enterprises that offer the greatest economic return.

Nor will the structural adjustment programme succeed if the economy is starved of foreign exchange. In 1986 nearly 40 per cent of the industrial sector's total material consumption was imported, and the proportion is as high as 80 per cent in some sectors. Any reduction in foreign exchange budgets inevitably has an impact on output. Following the sharp drop in coffee prices in July 1990, the foreign exchange shortage reached crisis proportions. The government was forced to trim budgets, allocating resources to strategic industries and those generating exports, while the private sector's allocation was cut altogether. Output inevitably suffered. Some relief was afforded by the EEC's Sectoral Import Programme, but only a small fraction of the \$24 million made available was allocated to the industrial sector and then only to four of the ten Corporations managed by the Ministry of Industry. Private sector enterprises were denied these resources and had to depend entirely on the franco valuta system and the parallel market. If the output of IPEs is to recover and the private sector is to expand, additional balance of payments support will be needed in the short and medium-term. Donors have not, as yet, committed funds. Access to foreign exchange must also be made more equitable, allowing private sector firms to compete for scarce resources with public sector enterprises. In the absence of a freely convertible currency, this may require the introduction of a foreign exchange auction system open to both public and private enterprises.

The transition to a mixed economy will be a lengthy and painful process. After fifteen years of central planning, existing management - both at a corporate and ministerial level - is ill-equipped to deal with the issues that will arise in a market system. Technical assistance is urgently required. Equally important will be capital assistance for the rehabilitation of industrial infrastructure, either on the basis of grants or concessional loans, and balance of payments support to prevent the economy becoming strangled by shortages of foreign exchange. There

has been a tendency in the past for donors to commit funds after recipient government's have shown good will be implementing the most socially painful reforms. In the case of Ethiopia, where the economic problems are deep rooted and of a critical nature, this would condemn the reform programme to failure. Quite simply Ethiopia does not have the means to escape its present plight. Ethiopia's economic recovery must be a cooperative venture between donor and government.

1. THE ECONOMY OF THE PEOPLE'S DEMOCRATIC REPUBLIC OF ETHIOPIA

1.1. Recent economic trends and short-term prospects

On March 7, 1990, the Central Committee of the Workers' Party of Ethiopia approved a range of reforms that would - when fully implemented - radically transform the economy from one that has, since 1976, been managed along the lines of a central planning model that of a market oriented mixed economy. Key elements to the reform package include:

- a. Recognition of peasants' usufruct rights to the land that will allow them to operate their own farms and transfer their farms to heirs, even though ownership will rest with the state. Peasant farmers will also be permitted to hire labour;
- b. Private investors are to be allowed to establish large commercial farms under tenure from the state;
- c. The state's virtual monopoly over the purchasing of agricultural produce is to be abolished in favour of the free market and private trading;
- d. State enterprises are to be based on the principals of profitability, competition and productivity. Those that cannot succeed on these grounds may be closed or sold to the private sector;
- e. Private sector enterprises will be allowed in any sector without a ceiling to their level of investment;
- f. Taxation will be reformed to encourage private entrepreneurs to compete with the state owned sector;
- g. Developers will be allowed to build, own and rent private housing and office blocks;
- h. Government owned land will be provided at concessional rates for private firms to construct hotels and other enterprises.

These proposals have been welcomed in Ethiopia and applauded by the much of the donor community. It is hoped that the return to the market system will restore incentives throughout the economy and thereby end a period of economic decline. Inevitably, implementation of the reform package will be a lengthy process, demanding structural adjustments in macro-economic policy and the key economic management institutions. Moreover, the government has hesitated before announcing one of the most socially painful economic reforms: devaluation of the Birr. This will be essential if exporters are to regain their competitive edge in the world market - at present, many exporters are subsidised - but a devluation will hurt consumers' pockets and marginal economic

activities which depend heavily on imported inputs. A gradual devaluation of the Birr over a period of two to three years is expected but the first step has yet to be taken.

The benefits of the reform package will, as the government willingly admits, take some time to materialise. In the meantime, the Ethiopia's critical economic situation, aggravated by the dislocations of a radical structural adjustment programme, will continue to deteriorate. Nor can the proponents of radical reform guarantee that their policies will solve Ethiopia's economic problems in the longer-term. As the experience of other countries demonstrates, much depends on exogenous factors. The most important of these are the inflow of sufficient foreign exchange and provision of funds for investment of generous terms.

As a result of Ethiopia's chronic balance of payments deficit, the economy has been starved of foreign exchange, reducing the capacity to purchase capital goods for new investment and essential inputs in the agricultural and industrial sector. When coffee prices plummeted to the lowest level for fourteen years and their lowest level in real terms since the 1920s, following the collapse of the International Coffee Organisation (ICO) quota agreement, Ethiopia's foreign exchange earnings were cut by at least 25 per cent in a matter of months - in the past decade coffee has accounted for about 70 per cent of Ethiopia's exports - thereby threatening the economy with foreign exchange strangulation. Although coffee prices rallied slightly in early 1990, rising to US\$0.85/lb from US\$0.75/lb at the end of 1989, the market is still unstable without the guiding hand of ICO quotas. According to Economist Intelligence Unit forecasts, arabica prices may recover to US\$1.1/lb by the first quarter of 1991, but prices will remain low if Brazil and Columbia have good harvests.

Meanwhile, the Ethiopian government is trying to step up production of coffee to offset the drop in market prices. Improved farmer incentives are the principal tool of this strategy. Official buying prices have fallen in real terms since the early 1980s and production by small-scale producers has followed suite, dropping from a peak of 3.9 million 60 kg bags in 1983/84 (October to September coffee year) to just 3.15 million bags in 1988/89. In October 1989, the government announced a 130 per cent increase in coffee prices, from Birr17 per 17kg bag to Birr36, thereby narrowing the gap between world market and domestic coffee prices. This may reduce the amount of smuggling, thought to represent about 20 per cent of the harvest, and will encourage farmers to step up production in the long term. It seems likely that the combined effects of good weather and improved incentives will bring about an increase in the 1990 harvest. The Hamburg commodity house F. O. Licht has forecast a harvest of 3.3 million bags for 1989/90. If both prices and production rise, the balance of payment crisis will pass, though the structural imbalance will persist.

The donor community offered some relief during

the foreign exchange crisis of 1989/90. Early in 1990 the EEC announced that it would provide ECU24 million for a Second Sectoral Import Programme - more than double the amount made available in early 1989 - for the purchase of essential inputs for agriculture and four of the public industrial Corporations. The World Bank is expected to follow suite with a balance of payments support facility of its own. However, the funds allocated to EEC represent no more than a drop in the bucket of need. Massive funding is required to support the input requirements of Ethiopian agriculture and industry.

Economic reform must be supported by new investment and investment in the rehabilitation of the existing, but poorly maintained and frequently obsolete, economic infrastructure. Unfortunately, this herculean task is beyond the means of Ethiopia's fragile economy. Domestic savings have fallen from 10 per cent of GDP in the 1960s to just 2 per cent in FY1987, averaging 1.7 per cent over the FY1983-FY1987 period. This reflects declining incomes in rural areas, limited opportunities for investment, inadequate supplies of agricultural inputs and consumer goods, all of which contribute to a low propensity to save in the private sector. Even though government revenues increased from 21.7 per cent of GDP in FY1981 to 28.8 per cent in FY1987, this has only just kept pace with the growth of expenditure. Despite its conservative budget management, the government has registered a small deficit on its current account during the 1980s and so public sector savings have been negative. Low levels of domestic savings are reflected in low levels of investment. Total investment averaged just 11 per cent of GDP from 1975 to 1987. There has been a slight upward trend in recent years, the level of investment remains far below that of comparable least developed countries.

Part of the problem is political. More than twenty years of years of fighting in the province of Eritrea, spreading to Tigray after the Revolution, have dislocated the economy. It has also drained the government purse. In November 1989, the President revealed military expenditure has increased at a rate of 19 per cent per year since 1974, reaching Birr3,500 million by 1989. By the mid-1980s general services (including defence) absorbed over half of recurrent expenditure and one third of total expenditure by the mid-1980s. As a result only a fraction of the government's revenues have been allocated to social and economic development. Whilst fighting continues in Northern Ethiopia and the government continues to allocate the major part of its revenues to defence, the domestic resources available for development will be severely constrained.

Owing to the limited domestic financial resources available, about 80 per cent of investment is financed by the government, from domestic and foreign borrowing. Yet, even though Ethiopia is classified as a "least developed" economy and, on the basis of GNP per capita statistics, is the poorest country in the world, it has received limited assistance from the donor

community. From 1974 to 1984, Ethiopia received an average of \$9.9 per capita in development assistance compared with an average of \$22.5 for other low-income African countries. When outstanding compensation claims were settled in 1985, aid flows more than doubled but donors continued to restrict disbursements owing to disagreements with the government over the appropriate economic policy, particularly with regard to the agricultural sector. In 1987, assistance to Ethiopia, estimated at US\$14.3 per capita, still lagged far behind the levels accorded to comparable African countries.

Donors have tended to react favourably to the piecemeal economic reforms introduced in the past. The EC, for instance, released an ECU51.9 million grant shortly after the government announced reforms to the agricultural marketing system in December 1987. If donors are favourably impressed by the reforms announced on March 5, 1990 - and most seem to be - additional funds could be released. However, major bilateral donors such as the United States of America and some of the EEC countries have linked development aid to political as well as economic reform. Establishment of a multi-party system and an end to fighting in Northern Ethiopia through a negotiated settlement have also been put forward as pre-conditions to increased aid flows. The necessity of such reforms was accepted by the Central Committee of the Workers Party of Ethiopia in March but a timetable has yet to be agreed. In the short-term at least, there is little prospect of Ethiopia receiving assistance on the scale needed to lift the economy out of its present plight.

1.2

Economic structure

According to the World Bank Ethiopia is the poorest country in the world with a per capita GNP of \$130. About 60 per cent of the population live below the absolute poverty line. From 1970 to 1980, the real annual GDP growth rate averaged just 0.6 per cent per year. In the 1980s, the growth rate accelerated somewhat with an average of 1.7 per cent recorded for the period up to 1986/87, but this still lagged far behind the estimated 2.9 per cent annual increase in population. Consequently, per capita incomes have fallen over the past two decades.

During the period immediately after the Revolution, from 1975/76 to 1977/78, the economy stagnated. The average growth rate of GDP was just 0.4 per cent per year, as a result of the disruption of economic activity following armed conflict with Somalia, the implementation of a nationwide land reform programme and the nationalisation of many commercial and industrial enterprises. However, growth rates accelerated to an average 4.4 per cent over the period 1978/79 to 1980/81. This was a remarkable achievement when one considers that growth was achieved without massive investment. Indeed, the level of investment was barely sufficient to cover depreciation. The driving force behind the economy at this period was mass mobilisation. The government organised national development campaigns (zemechas) to rehabilitate the damaged industrial and transport infrastructure and consolidate the transformation of Ethiopia into a centrally planned economy. By the early 1980s the industrial sector recorded capacity utilisation rates of 80 to 100 per cent, while good weather in 1978/79 and 1979/80 ensured bumper harvests. Thereafter, the economic situation began to deteriorate.

A drought in 1981/82 led to fall in agricultural value added while supply constraints and a low level of investment contributed to a marked slow down other sectors. The economy recovered in 1983 only to be hit by a more devastating drought in 1984-85 which affected not just the north of the country but also the grain surplus producing regions in Highland Ethiopia. Agricultural value added dropped by 9.9 per cent in 1983/84 and 16.3 per cent in 1984/85 and the fall in output, together with the reallocation of resources to relief and rehabilitation activities, contributed to a downturn in all other sectors of the economy. GDP fell by 3.6 per cent in 1983/84 and 7 per cent in 1985/86.

Good harvests the following two years brought about a partial recovery though agricultural value added remained below the level of the early 1980s. The performance of other productive sectors was equally disappointing. Supply constraints, brought about by low levels of agricultural production and a deteriorating current account, which forced the government to restrict the volume of imported inputs, acted as a brake on the industrial sector. Low levels of investment, due to negligible

domestic savings and limited external resource flows, hampered development efforts throughout the economy. These constraints were exacerbated by another drought in 1987-88. Although the prospects of a recovery seemed bright in 1988-89, following a 12 per cent increase in the cereal harvest and a 15 per cent increase in coffee exports, Ethiopia's fourth drought in less than a decade struck in 1989-90 and coffee prices collapsed in mid-1989 thereby dispelling any hope that Ethiopia's economic situation would improve in the short-term.

Agriculture's poor performance in recent years is the root cause of the deteriorating macro-economic situation. Agriculture has traditionally been the mainstay of the economy: even in drought years it contributes more than 40 per cent of GDP, it employs over 85 per cent of the workforce, the majority working on small peasant farms, and generates 90 per cent of exports. From 1980/81 to 1986/87, however, agricultural value added declined by an average annual rate of 0.4 per cent. Since output of grains - the principal food crops - has failed to keep pace with population growth, grain now has to be imported in years of good harvests. The average per capita daily calorific intake has fallen by nearly 5 per cent over the last twenty years while the same indicator has increased significantly for almost all other low income countries. Repeated droughts in the 1980s have certainly played a major role in the decline in agricultural value added, but there is also an underlying trend of declining per capita agricultural production. This may be ascribed to both environmental degradation and the erosion of incentives through declining real prices for agricultural products.

Table 1.1: Gross domestic product and sectoral value added growth rates, selected fiscal years
(Annual per cent rates and average period rates)

Sector	1975- 1979-		1982	1983	1984	1985	1986	1987
	1978	1981						
Agriculture	.1	3.6	-1.3	4.7	-9.9	-16.3	9.2	11.2
Other commodity sectors:	-1.8	6.4	3.1	5.2	6.0	-.6	3.7	6.7
- Mining	-10.1	1.0	16.0	-3.2	27.5	21.6	.7	32.4
- Manufacturing	-.3	8.0	4.6	7.3	3.8	1.6	5.3	5.9
- Handicrafts & SSI	-.2	2.5	2.5	2.5	2.5	.0	2.5	2.8
- Construction	-5.9	8.3	-1.1	4.0	9.8	-4.8	1.4	11.3
- Utilities	-.2	4.5	12.4	6.4	21.8	-3.9	5.4	7.4
Distribution Services	-3.4	.0	3.8	6.5	1.6	-.8	7.9	5.2
Other services	6.8	4.7	4.1	6.1	.5	2.3	3.6	5.2
- Public administration	10.1	3.8	3.1	7.7	1.6	1.0	1.0	5.7
GDP	.4	4.4	1.2	5.3	-3.6	-7.0	6.7	8.0

Source: National Bank of Ethiopia, Annual Report and Quarterly Bulletin, various issues.

In marked contrast to the decline in agricultural value added during the 1980s, the medium and large-scale - mostly public - industrial enterprises have achieved

positive real MVA growth rates, averaging 4.8 per cent. As a result of recent efforts to increase manufactured exports their value more than doubled from FY1980 to FY1988 and their share in total exports has increased from 8 per cent to 19.8 per cent in 1986/87. On both these counts industry has, consistently, performed better than any other productive sector. However, medium and large-scale industry's contribution to GDP is still relatively modest at 8.4 per cent. Nor is industry a major employer: it accounts for less than 6 per cent of the workforce. Consequently, the impact of industry's comparatively strong performance impact on the remainder of the economy has been limited. Moreover, there are indications that the sectoral growth rate is beginning to slow after a decade of relatively steady growth. Even though several large-scale industrial enterprises were commissioned in the mid-1980s, levels of investment are insufficient to sustain a rapid pace of expansion. Since most large scale enterprises operate at near full capacity, the industrial sector cannot increase output by the addition of factors other than capital. Supply constraints, both for domestic and imported inputs, are also beginning to tell.

Table 1.2: Structure of gross domestic product, selected years
(Per cent shares at constant 1980/81 prices)

Sector	1974/75	1980/81	1986/87
Agriculture	52.7	50.3	43.3
Other commodity sectors:	14.8	15.5	17.9
- Mining	.2	.1	.2
- Manufacturing	5.5	7.0	8.4
- Handicrafts & SSI	4.1	3.8	3.9
- Construction	4.4	4.0	4.4
- Utilities	.7	.7	1.0
Distribution Services	15.8	15.0	17.3
Other services	16.1	19.1	21.5
- Public administration	5.8	7.2	8.0
GDP Birr Million	6,953.0	8,096.6	8,906.7

Source: National Bank of Ethiopia, Annual Report and Quarterly Bulletin, various issues.

This is particularly true of the small-scale industry sector which, since the Revolution, has suffered from acute shortages of capital and raw materials. As a result, growth rates in the small-scale industry and handicrafts sector averaged just 2.2 per cent from 1980/81 to 1986/87 and its share of GDP has remained less than 4 per cent over this period. The government has now turned its attention to the development of this sector where idle capacity offers an opportunity to increase industrial output without substantial investment and the provision of broader investment opportunities may help mobilise private savings - particularly those from parallel market activities - for develop.

Other productive sectors - mining and utilities - make a very limited contribution to GDP, though substantial investments in recent years have brought about rapid growth rates. Ethiopia's mineral resources are thought to be substantial and diverse, though they have yet to be fully explored. Weak infrastructure, particularly the sparse road transport network, is a major obstacle to the utilisation of these resources. Consequently, development of the mining sector will require substantial investment. Given the government's limited financial resources, finance for mineral sector projects could best be raised through joint-venture and production sharing contracts with foreign companies. The first steps towards the establishment of a partnership between the government and private capital were taken in 1986 with the formulation of a framework for production sharing contracts with foreign companies in the field of oil exploration.

The past decade has seen a steady growth in the service sectors with their share of GDP rising from 32.5 per cent in 1974/75 to 38.8 per cent in 1986/87. The development of state owned distribution services and the road haulage industry - dominated by private sector contractors - have been particularly important. Inevitably, public administration has seen steady growth as the economy moved from an open market to a centrally planned model, though the administration's share of GDP (8 per cent in 1986/87) remains relatively modest considering its crucial role in economic management.

Despite the deteriorating macro-economic situation, the government has struggled to bring about improvements in the level of social services. During the 1980s, social services have been allocated just 18 per cent of central government recurrent expenditure and 11 per cent of capital expenditure. Nevertheless, considerable progress has been made. Nationwide literacy campaigns from the late 1970s - in which most of the teachers participated voluntarily - have increased the level of literacy from less than 10 per cent before the Revolution to about 60 per cent in the mid-1980s. Likewise, the rapid expansion in the number of schools (see Section 5.1) has enabled an increase in the enrolment rate for those of primary school age from 11 per cent in 1965 to 36 per cent in 1986 and from 2 per cent to 12 per cent in the case of the secondary school age-group. Health care coverage has also widened with 34 per cent of the population having access to basic health care facilities in 1986 as compared with 15 per cent before the Revolution. Moreover, a radical programme of land reform and strict controls on the wage increases for public servants - including those employed by parastatals - has brought about a more egalitarian distribution of wealth and income in rural areas.

When compared with other developing countries, however, Ethiopia still lags far behind in some aspects of its

social development. Ethiopia's school enrolment rates are still less than one half of the average for low income countries and it has been argued that the increase in student numbers has been achieved at the expense of quality. Similarly, the number of physicians per capita has fallen slightly over the last twenty years and now stands at 1:77,360 in 1984, by far the lowest number in the developing world. This is reflected in a high infant mortality rate (120 per thousand) and short life expectancy (46 years). Progress towards an egalitarian society should also be set against the decline in per capita incomes over the past fifteen years and the persistence of shortages for many essential consumer goods. The current average nutritional intake is thought to be about 25 per cent below recommended levels and recent droughts have been associated with widespread famine.

The rapid pace of population growth (currently estimated at about 2.9 per cent) puts additional strain on the social services and the economy, undermining the gains achieved by respectable rates of economic growth. As it is the economy has been unable to keep pace and living standards have fallen. The first census, undertaken in May 1984, shocked the Ethiopian government by revealing a population of about 42 million as compared with the 32 million of the previous estimate. At current growth rates the population will double in 24 years. Clearly, measures to promote economic growth must be accompanied by the spread of family planning, not just through the health infrastructure - which is sparse - but also by using community distribution approaches to reach the widest population. Yet even if fertility declines rapidly the World Bank estimates that the population could increase by 50 per cent in fifteen years and reach 80 million by the year 2015^{1/}. This optimistic scenario still raises the prospect of falling per capita food production and deteriorating social service coverage.

A major constraint on the economy is the low level of domestic saving and investment. Domestic savings have fallen from 10 per cent of GDP in the 1960s to 7.5 per cent of GDP in FY1975 and 2 per cent in FY1987, averaging just 1.7 per cent over the FY1983-FY1987 period. This compares unfavourably with an average of 15 per cent for low-income countries in 1987. Falling per capita incomes and stagnation in the agricultural sector may be identified as the principal cause of falling private sector savings since 1975, though institutional factors have also played a part. In recent years banks have extended their network of offices in rural areas, maintained positive real interest rates and opened credit facilities to small farmers in an effort to mobilise private sector savings. However, the banking system faces an uphill

1. World Bank, Population, Health and Nutrition Sector Review, September 1985.

struggle against a declining propensity to save as real incomes fall.

Private consumption has fluctuated at around 80 per cent of GDP since 1975, but fallen in per capita terms. Consequently, potential demand for most consumer goods is considerably greater than effective demand and consumption is likely to absorb a large proportion of incremental increases in per capita income for some time to come. Public sector savings, as represented by the central government current account surpluses, were negative over the FY1981-FY1987 period: a consequence of rapidly growing recurrent expenditure commitments. Whereas private sector consumption has stagnated since FY1975, public sector consumption increased from 13.2 per cent of GDP to 19.2 per cent in FY1987.

Low levels of domestic saving have restricted the volume of domestic finance available for investment and forced the government to resort to foreign borrowing to fund its development programme. Total fixed investment averaged just 11 per cent of GDP from FY1975 to FY1987. Although the level of investment has increased from about 10 per cent of GDP in the late 1970s to around 11.5 per cent in the early 1980s, reaching 14 per cent of GDP in FY1987 (Table 1.3), this is still considerably lower than the levels seen in other developing countries^{2/}. It is also far below the level Ethiopia must achieve to bring about a significant increase in per capita income, even though the incremental capital-output ratio is relatively low by African standards. About 70 per cent of total investment has been in the public sector, virtually all of which was funded from the central government budget and by internal and external borrowing. Public sector enterprises are unable to support their own investment programmes because they must surrender all but 5 per cent of their profits to the Ministry of Finances each year. Similarly, the private sector has made a limited and declining contribution to total investment; falling from nearly 50 per cent of total investment in FY1976 to less than 20 per cent in the mid-1980s. Until 1989, domestic private sector investment was restricted to a limited range of small-scale industrial activities and agriculture. Opportunities for private sector investment were also curtailed by difficulties securing in credit and capital inputs. Legislation promulgated in 1989 (see Section 4.3) will remove some of these constraints. It hopes to provide a channel for the mobilisation of private sector resources, particularly the high liquidity of private sector traders. The initial response has been encouraging and so the level of private

2. According to the World Development Tables 1989 the average rate of gross domestic investment for low income countries was 26 per cent 1987, though this figure drops to 15 per cent if China and India are excluded.

sector investment may increase in the near future. Efforts to attract foreign capital have met with little success since the nationalisations of 1975. However, the government has provided a liberal framework for foreign investors with the promulgation of a new joint-venture code in 1989. This is intended to attract foreign capital for investments in export-oriented projects in both the industrial and agricultural sectors.

Table 1.3: Expenditure on gross domestic product, selected years
(Percent of GDP)

	1975	1981	1982	1983	1984	1985	1986	1987
Gross Domestic Expenditure	103.0	105.6	108.2	108.5	110.4	111.2	115.8	112.5
Consumption	92.5	95.2	96.4	97.3	97.6	99.7	104.0	98.0
- private	79.4	79.5	80.1	80.0	79.2	80.2	84.1	78.8
- public	13.2	15.7	16.2	17.3	18.4	19.5	19.9	19.2
Investment	10.4	10.4	11.8	11.2	12.8	11.4	11.8	14.5
Net imports	3.0	5.6	8.2	8.5	10.4	11.2	10.6	12.5
Domestic Savings	7.5	4.8	3.6	2.7	2.4	.3	1.2	2.0

Source: National Bank of Ethiopia, Quarterly and Annual Bulletins,

various issues.

Even though the macro-economic situation has deteriorated markedly in recent years, government revenues have increased from Birr1.8 billion (21.7 per cent of GDP) in FY1981 to Birr2.9 billion (28.8 per cent of GDP) in FY1987 (Table 1.4). About 75 per cent of government revenues are generated from taxation, which amounted to about 20 per cent of GDP. Since the tax burden is already extremely heavy for a low income country, there appears to be limited scope for increasing tax revenues in the near future unless a steady pace of economic growth can be achieved. Consequently, the government has come to depend on non tax revenues, particularly transfers from the public sector corporations (averaging Birr416 million over the FY1981-FY1987 period), as a source of increased income in recent years.

On the whole, the government has managed its recurrent expenditure conservatively; the cumulative current account deficit amounted to Birr86 million for the FY1981-FY1987 period, less than 0.5 per cent of cumulative revenues. General services (including administration and defence) are the main component of recurrent expenditures, averaging 53 per cent of total recurrent expenditure from FY1981-FY1987. In contrast, only 5.9 per cent of government expenditure went towards economic services and 18 per cent towards social services over this period. If the government could reduce expenditure on general services, substantial resources would be released for development activities.

Because of the overall deficit on current account budget during the 1980s, the government has had to finance

its investment programme by borrowing. Total capital expenditure averaged Birr1,032 million (11.5 per cent of GDP) over the FY1981-FY1987 period, with a peak of Birr1,245 million in FY1983 when the government implemented a number of large-scale industrial and agricultural projects to coincide with the tenth anniversary of the Revolution. Over three-quarters of the government's capital expenditure has been directed towards economic development in the seven years to FY1987 (agriculture and resettlement 30 per cent; mining and energy 18.8 per cent; and industry 10.7 per cent).

Table 1.4: Central government finance, FY1981 to FY1988
(Million Birr)

	1981	1982	1983	1984	1985	1986	1987
Revenue	1,757	1,877	2,184	2,243	2,260	2,677	2,864
of which:							
- taxes	1,362	1,436	1,546	1,718	1,677	2,043	2,225
Current expenditure	1,655	1,916	2,541	2,237	2,696	2,297	2,606
of which:							
- general	952	1,102	1,327	1,229	1,229	1,268	1,395
Current Surplus	102	-39	-357	6	-437	381	258
Capital expenditure	436	714	1,245	962	945	1,107	1,219
Overall deficit	-334	-753	-1,602	-956	-1,381	-726	-961
As percent of GDP:							
Current revenue	21.7	22.6	24.0	25.1	25.4	27.6	28.8
Current expenditure	20.4	23.1	28.0	25.0	30.3	23.7	26.2
Current surplus/deficit	1.3	-.5	-3.9	.1	-4.9	3.9	2.6
Capital expenditure	5.4	8.6	13.7	10.8	10.6	11.4	12.3
Overall deficit	-4.1	-9.1	-17.6	-10.7	-15.5	-7.5	-9.7

Source: National Bank of Ethiopia, Quarterly Bulletin, various issues.

When capital expenditures are included the government's overall fiscal deficit increases to an average of Birr1,063 million (11.8 per cent of GDP) over the FY1981-FY1987 period, with a peak of Birr1,602 million, 17.6 per cent of GDP in FY1983. IMF statistics indicate that 55 per cent of the fiscal deficit was financed by foreign borrowing from FY1982 to FY1987, though the proportion has tended to fluctuate markedly from year to year. About 40 per cent of the deficit has been financed by the domestic banking system, though upwards of 60 per cent has been borrowed from domestic banks in years of substantial deficits, such as FY1983. One consequence of the government's dependence on the banking system for financing its fiscal deficit is to restrict the availability of credit for other sectors. Up to FY1982, the banking system's claims on non-central government borrowers exceeded those on the central government. The substantial increase in central government domestic borrowing in FY1983 reversed this position. By FY1987 claims on central government accounted for

61.3 per cent of domestic credit. While this has not restricted the credit available to public enterprises, which are allowed to build up substantial over-draft facilities with banks (see Section 4.2), the private sector has suffered.

Another aspect of Ethiopia's poor economic performance in recent years has been the deterioration of the trade balance and current account position. From FY1975 to FY1987, the value of exports increased at an annual average rate of 4.7 per cent, though the trend has by no means been one of steady growth. From FY1975 to FY1978 the value of exports fell at an average annual rate of 15.6 per cent. Exports recovered slowly thereafter, registering an average annual growth rate of 4.1 per cent up to FY1985. A 24 per cent increase was recorded in FY1986, but this was almost entirely due to a 50 per cent increase in coffee prices. The following year export earnings fell by 14 per cent, to a lower level than FY1981. An increase in coffee prices and the volume of coffee exports in FY1988 led to a further increase in export earnings. However, the abolition of the International Coffee Organisation (ICO) quota system in July 1989 and the subsequent collapse of coffee prices have been a major reverse. At the end of 1989 coffee prices hit their lowest level for fourteen years and the lowest level in real terms since the 1920s. What is more, there is little prospect of prices rising significantly in the near future. This has serious implications for Ethiopia's balance of trade: forecasts for FY1990 suggest that total earnings may fall by as much as 25 per cent below their 1988 level.

In order to reduce dependence on coffee and the economy's susceptibility to external shocks, the government identified export diversification one of its priorities under the Ten Year Perspective Plan (FY1985-FY1994). The aim was to reverse the pattern of structural change which, since 1974, has left the economy increasingly dependent on a single commodity. In the three years to FY1974, coffee accounted for less than 40 per cent of export earnings; by the FY1984-FY1987, this proportion had risen to 65 per cent, with a peak of 72 per cent in FY1986. Increasing dependence on coffee resulted from a reduction in the volume of exports of other commodities rather than the expansion of the export oriented coffee sector. Coffee exports increased marginally from an average of 74,000 tons in FY1972-FY1974 to 75,500 tons in FY1985-FY1987, with a peak of 97,000 tons in FY1984. Over the same period, exports of oilseeds and pulses, the second most important commodity group before 1975, dropped from 200,000 tons to 22,500 tons. The impact of declining export volumes was reinforced by the stagnation of the market price for these commodities. Their contribution to total exports fell from 25 per cent in the years before 1975 to just 5 per cent in the period FY1981 to FY1987. Similar trends may be traced in exports of cotton, fruit and vegetables and meat products (see Table A-0).

Some progress towards export diversification has been made since 1984, notably in the expansion of exports of livestock, fruit and vegetables, and hides and skins. Nevertheless, the predominance of coffee persists. Moreover, the expansion of exports from the agricultural sector has done little to reduce dependence on exports of primary commodities; commodities which generate lower levels of value added and have more unstable market prices than processed goods and manufactures. In FY1986 - the last year for which complete statistics are available - manufactured and processed goods accounted for just 15.7 per cent of exports. The MOI has made considerable efforts to diversify industrial exports and but in the industrial sector too exports are dominated by one commodity. In FY1988, processed and semi-processed hides and skins, accounted for 69 per cent of manufactured exports of MOI supervised industries.

What is more the expansion of exports has been achieved at considerable economic and social cost. Not only have consumers had to sacrifice consumption, producers have had to sacrifice income. Owing to the artificially high valuation of the Birr and high consumer prices maintained by tariff and non-tariff barriers, domestic prices are often substantially higher than those prevailing in the world market. Moreover, protection has allowed producers to operate with high production costs relative to world market prices. Consequently, many industrial and agricultural products can only be exported at a loss. These losses have to be covered by subsidies from the central government budget which involves the redistribution of resources from profitable to unprofitable enterprises and so adversely effects the efficiency of resource distribution.

While exports grew sluggishly at an average annual rate of 4.7 per cent from FY1975 to FY1987, the value of imports increased rapidly at an annual rate of 10.4 per cent over the same period. To some extent the rapid growth of imports was unavoidable as the government stepped up its development programme in the late 1970s and early 1980s, since virtually all capital goods and fuel have to be imported and the productive sectors depend heavily on imported inputs. Over the FY1980 to FY1987 period, capital goods and fuel accounted for over half the import bill.

However, the structure of imports has changed significantly during the 1980s. While the volume of crude petroleum imports increased by 21.2 per cent from FY1980 to FY1987, the value of fuel imports fell by 38.7 per cent as a result of the drop in oil prices in 1986 and the increased production capacity at the Assab refinery which enabled a 77 per cent cut in petroleum product imports. Consequently, fuel accounted for only 10.7 per cent of the import bill in FY1986-FY1987 as compared with 21.2 per cent in FY1980-FY1981. The proportion of raw materials and intermediate goods in total imports has also fallen, from 18.4 per

cent to 14.8 per cent, as imports of these commodities stagnated during the 1980s. Increases in the value of imported inputs have not kept pace with the demands of industry and agriculture and both sectors have suffered shortages. This has affected output. In contrast, imports of capital goods, over half of which are destined for the industrial sector, have more than doubled from FY1980 to FY1987 and their contribution to the total import bill has risen from 29.6 per cent to 38.2 per cent. This rapid increase reflects both the scale of the government's investment programme and the capital intensive path of development the government has chosen, both for industry and agriculture. Within the industrial sector, modern technology has been favoured, not only because the government regards technological progress as an integral part of industrial development, but also at the behest of donors who have financed much of the development programme. The preference for modern technology has inevitably inflated the import bill.

The government has tried to control imports of consumer durables through the Ethiopian Import and Export Corporation (ETIMEX: the sole channel for imports financed by National Bank of Ethiopia foreign exchange allocations) by giving priority to strategic imports of capital goods and inputs. Consumer durables accounted for only 7.3 per cent of total imports over the period FY1980-FY1987. Nevertheless, imports of consumer durables increased by 69 per cent over this period. Much of this increase was accommodated by the franco valuta system (funded by private unrequited transfers for the most part) which is outside direct government control. In addition, the smuggling of animals, coffee and precious metals has financed a return trade of smuggled consumer goods which supports a flourishing market in Dire Dawa and the mercato area of Addis Ababa. These imports are not included in official statistics. Imports of consumer goods through official channels were the first to be cut when the government implemented its retrenchment programme following the collapse of coffee prices in July 1989. ETIMEX received no foreign exchange allocation in the first six months of FY1990 and there is no indication that funds will be released later. As a result, official imports of consumer goods have stopped. This will inevitably strengthen the role of illegal traders.

One of the most significant changes in the structure of imports has been the growth of food imports. Increases in agricultural output did not keep pace with population growth during the late 1970s and early 1980s. Ethiopia's food deficit has increased to the extent that substantial grain imports are needed in years of normal rainfall as well as during periods of drought (see Section 5.2). Grain imports have increased from an average of 85,000 tonnes in FY1980-FY1981 to 628,000 tonnes in FY1986-FY1987, while the total food import bill, over 90 per cent of which is for grain, increased by 228 per cent from FY1980-FY1981 to FY1986-FY1987. As a result, the share of food in total imports rose from 4.6 per cent to 14.4 per cent.

The disparity between growth rates for import and export volumes has been reinforced by the changes in the terms of trade. Rising import prices, particularly for oil and capital goods, and falling commodity prices resulted in a 4.7 per cent decline in the terms of trade per year from 1970 to 1984. The fall in oil prices and 55 per cent rise in the price of coffee reversed this trend in 1986. However, these gains were short-lived. The general export unit value index dropped by 25 per cent in FY1987, largely because of the 42 per cent drop in coffee prices, though the unit value of live animal exports also fell. Moreover, the deterioration of the terms of trade is expected to continue in the medium term. Once again the fall in coffee prices is largely to blame, though prices are also weak in the export markets for pulses and oilseeds. Medium-term prospects appear favourable only in the case of exports of hides and skins, largely because of measures to increase the degree of processing. In the context of stagnant or falling export unit prices, Ethiopia can only increase its export earnings by increasing export volumes. Furthermore, as export prices fall Ethiopia will be under greater pressure to reduce production costs so as to maintain its cost-competitiveness.

A fixed exchange rate has contributed to the balance of trade deficit. Since 1974 the Birr has been kept on par with the Dollar at a rate of Birr2.07=\$1 by exchange controls. From 1980 to 1986 the Birr appreciated against the currencies of its trading partners. Although the Birr subsequently depreciated along with the Dollar its value remains higher than in 1981 in nominal and real terms. Considering Ethiopia's consistent balance of trade deficit the currency is considerably over-valued. This is substantiated by the active parallel markets offering exchange rates for the Dollar 100 to 150 per cent above the official rate.

Devaluation of the Birr would, there can be no doubt, lead to a marked improvement in the balance of payments and the efficiency of the economy (See Section 2.5): exporters would receive an incentive to increase production, imports of consumer durables would be discouraged and producers would be forced to search out domestic inputs as import-substitutes - though aggregate demand for imports would be effectively controlled by the supply of foreign currency and import restrictions. The benefits of a devaluation are now recognised by the government, though there remains some confusion as to how this might best be achieved. A single step devaluation would shock the economy and its impact would be unpredictable, in the absence of suitable studies. Some degree of inflation is likely and this would probably affect the urban poor the worst. Devaluation would also have to be accompanied by tax reform to ensure that it did not widen the budget deficit. It seems likely, therefore, that the government will opt for a gradual transition to a market based system over a period of two to three years. In the meantime, the exchange rate will remain fixed but adjustable. As the Birr devalued the impact on monetary

conditions and inflation will be closely watched and will serve as a guide to the progress of reform.

Although Ethiopia's balance of trade deteriorated markedly during the early 1980s - the deficit rising from \$225.7 million in FY1981 to \$507.6 million in FY1985, before recording a 10 per cent fall to \$455.5 million in FY1986 owing to increased earnings from coffee exports - the current account has been cushioned by exports of services and net-transfers. Exports of non-factor services increased by about 10 per cent per year during the early 1980s, largely due to the activities of Ethiopian Airlines and Ethiopian Shipping Lines. Private un-requited transfers have also increased from \$23.7 million in 1981 to \$212.9 million in 1985: an increase that is almost entirely attributable to remittances by charitable organisations in response to the drought of 1984/85. Once the drought had passed, remittances dropped to \$69.4 million in 1986. Official transfers followed a similar path, reaching a peak of \$397 million in 1985 - mostly in the form of humanitarian relief - and then falling to the pre-drought level of \$113 million the following year. The importance of these transfers was such that the current account registered a surplus in 1985, though in 1986 the current account deficit reached record proportions at \$327 million.

Ethiopia has received very little in the form of balance of payments support. Libya provided a Birr327 million loan in FY1982 and the IMF agreed a stand-by facility of SDR67.5 million in 1981 followed by compensatory financing worth SDR35.3 million in 1986. Consequently, the government has had to finance the current account deficit by drawing on reserves and external borrowing. In 1981, 1985 and 1986 surpluses on current account resulting from sharp increases in private and official transfers enabled the government to bolster its reserve position. In other years, draw-down on external reserves covered around 40 per cent of the deficit. By November 1989, Ethiopia's reserves had dropped to \$40 million, sufficient to provide import cover for about four weeks.

External borrowing^{3/} has increased steadily during the 1980s, with disbursements rising from \$139 million in 1982 to \$503 million in 1988. As a result Ethiopia's external debt has more than doubled from \$1,239 million in 1982 to \$2,978 million in 1988, rising from the equivalent of 28 per cent of GNP to 54 per cent. While the bulk of Ethiopia's debt is owed to official

3. Statistics on Ethiopia's external debt cover only those liabilities picked up by the World Bank's reporting system. This excludes a large proportion of Ethiopia's debt centrally planned economies, notably the USSR. In November 1988, the Central Committee of the Worker' Party of Ethiopia revealed that Ethiopia's military debt amounted to \$4,000 million and servicing repayments totalled Birr530.5 (\$256 million) million in 1988.

creditors (31.5 per cent to multilateral creditors and 46.6 per cent to bilateral donors), the proportion of total debt raised from private creditors has increased from 8.2 per cent in 1982 to 15.8 per cent in 1988. Moreover, the share of credits raised on the financial markets has increased faster than suppliers credits. Short-term debt accounts for a further 5 per cent of the total. Despite the government's recourse to financial markets and short term credits the average terms of new commitments have improved slightly since 1982, though proportion of variable interest rate loans has increased from 2.7 per cent to 8.4 per cent in 1988.

Ethiopia's debt servicing obligations have increased at a faster rate than its debt burden, rising from \$74 million in 1982 to \$267 million in 1988. Over the same period the ratio of debt servicing to exports has increased from 13.7 per cent to 39.2 per cent. This is an intolerable burden for low-income country struggling with a widening current account deficit. Moreover, the situation is likely to deteriorate in the near future as debt servicing on the 1988 pipeline increases to a peak of \$315 million in 1989 and the collapse of coffee prices reduces export earnings. Nevertheless, Ethiopia has yet to formally reschedule its debts with the Paris or London Clubs and has a record of prompt repayments. At the end of 1988 arrears on long-term debt servicing amounted to only \$1 million.

Even though the World Bank classifies Ethiopia as the poorest country in world in terms of GNP per capita, it has received modest amounts of development aid. From 1974 to 1984, Ethiopia received an average of \$9.9 per capita in development assistance compared with an average of \$22.5 for other low-income African countries. Aid flows more than doubled from an average of \$204 million dollars in 1982-84 to \$726 million in 1985, in response to the drought and the resolution of compensation claims by foreign nationals, then dropped slightly to \$647 million in 1987 (see Table A-0). Despite the significant increase in aid flows, Ethiopia continues to trail behind other low-income African countries with development assistance amounting to \$14.3 per capita. About half the development assistance disbursed in 1987 was committed by bilateral donors, led by Italy (20 per cent of the total), Sweden (5 per cent) and the Federal Republic of Germany (4.3 per cent). The remainder was committed by multilateral donors, of which the EC and IDA were the most important (14.8 and 13.2 per cent respectively). Assistance from the centrally planned economies - not included above - has been directed primarily at the development of infrastructure and basic industries while the OECD and multilateral donors have focused on the directly productive sectors and social services.

In addition to development assistance, Ethiopia received substantial quantities of humanitarian aid in response to the drought of 1984/85 and subsequent food crises. The bulk of this emergency relief has been provided in kind, primarily in the

form of grain and food but also as vehicles, medical supplies and spare parts. Nearly one million tonnes of food aid was delivered in 1984/85 and the total value of emergency relief assistance in that year is estimated at over \$500 million. Another 570,00 tonnes of food aid was provided in 1986/87, nearly a million tonnes of grain was committed by donors in 1987/1988 and the government has requested a similar quantity for 1989/90. Consequently the total value of emergency relief in recent years has probably been of the same order as development assistance.

1.3

An overview of the manufacturing sector

Although industries in the modern sense of the term were first established in Ethiopia at the turn of the century, it was not until the 1950s that industrialisation gathered pace. At that time, generous tax incentives, high levels of tariff protection and the provision of credit by Ethiopian banks on favourable terms encouraged an inflow of foreign capital into the industrial sector. Most of these foreign owned enterprises were in the field of import-substitution. Food, beverages and textiles accounted for nearly 75 per cent of MVA in 1965. Industry was capital intensive and had few backward linkages into other sectors of the economy. Instead, it depended heavily on imported inputs.

A profound change in the structure of ownership and management took place in 1975, when the government nationalised virtually all the large-scale industrial enterprises owned by foreigners and Ethiopians alike. From that date, the industrial sector has been dominated by Industrial Public Enterprises (IPEs). In 1985/86, IPEs accounted for 95 per cent of MVA and 93 per cent of employment of all medium and large-scale industrial enterprises. Private ownership was restricted to a narrow range of small-scale industrial activities and access to inputs and foreign exchange was restricted as the government gave priority to the public sector. Nevertheless, the small-scale industrial sector continues to play an important role in the economy. Complete figures are not available but, according to a survey undertaken in 1985/86, small-scale industry accounts for about 23.4 per cent of total MVA and 45 per cent of all employment in the industrial sector.

Industrial activity declined slightly from 1975 to 1978 owing to the disruption of the economy during a period of armed conflict and levels of investment that were barely sufficient to cover depreciation. The situation improved markedly in 1978/79 and 1979/80 when the industrial sector registered growth rates of 15 and 6.5 per cent. This was achieved through mass-mobilisation, the elimination of supply bottlenecks and, in the continued absence of significant investment, the rehabilitation of idle plant. By the early 1980s IPEs were working at near capacity. Even though a new generation of large-scale IPEs were commissioned in the mid-1980s, industry's performance began to deteriorate. MVA growth rates averaged 4.8 per cent from 1980/81 to 1986/87. While this performance was stronger than that of the economy as whole, the figures suggest a downward trend in growth rates. This is confirmed by statistics on gross production value for the IPEs for the period up to 1988. These indicate that growth rates fell from around 8 per cent in the early 1980s to just 2.8 per cent in 1988.

Over the last decade there has been very little change in industrial structure, despite the government's plans to broaden the industrial base through the establishment of basic industries. In 1985/86, food, beverages and textiles still

accounted for 58.4 per cent of MVA. Some progress has been made towards the establishment of basic industries in the non-metallic minerals branch, though this sector is dominated by the cement production. Other than the oil refinery, the chemicals sector continues to be oriented towards the production of final goods, though several resource based projects are in the pipeline. The weakest link in Ethiopia's industrial structure is the engineering sector. It was only in 1988 that the first large scale engineering plant, the Akaki Spare Parts Factory, was established. In the 1980s a number of assembly plants were commissioned with the intention of phased development of manufacturing operations but progress on this front has been slow. Consequently, Ethiopia is almost entirely dependent on imports for its machinery and for a large proportion of its spare parts.

The government's preference for large-scale projects using modern, capital intensive production strategies has exacerbated industry's dependence on imported technology and handicapped the development of a domestic engineering capability. New large-scale capital intensive projects have taken the lions share of the investment funds allocated to industry. Such projects are costly in terms of foreign exchange, both in the short-term as virtually all the machinery has to be imported and over the long-term owing to continued imports of spare-parts and intermediate goods and debt servicing obligations. Moreover, they have not proved a cost-effective means of generating employment. Total employment in the medium and large-scale manufacturing sector amounted to only 90,845 in 1986: equivalent to about 0.5 per cent of the economically active population.

Industry has developed along the lines of import substitution and continues to be inwardly oriented. From 1984 to 1988 only 5.7 per cent of industrial output was exported. Despite industry's orientation towards the domestic market, it draws heavily on imports for inputs. The degree of import dependence has fallen from 47.4 per cent in 1978 to 39.7 per cent in 1985/86. Even so, the chemicals and metalworks branches continue to import over 80 per cent of their inputs. At a time of foreign exchange constraint this is both a burden and a source of risk, a reduction in the foreign exchange allocation would severely affect output. There is considerable room for the strengthening of backward linkages between industry and other sectors of the economy, particularly in the development of mineral resources and the improvement of coordination between agriculture and industry. A number of enterprises using agricultural raw materials have found out-grower contracts an effective means of ensuring regular supplies. Such contracts could profitably be extended to other plants and branches. At present, the state marketing channels mediate between supplier and producer.

Over the period 1985 to 1989, the leather and leather products accounted for 65.6 per cent of manufactured

exports. Due to a structural change in the industry at a global level, Ethiopia has been able to expand exports of semi-processed and processed leather rapidly. Other products have had difficulty competing in the international market, despite the provision of generous subsidies, often owing to their poor quality and design. Public sector managers have little experience of export markets since exports represent an extremely small proportion of total sales (ranging nil in the case of the Metal Works Corporation to 6.8 per cent in the case of food products and, with a huge leap, 49.7 per cent in the case of leather and leather products over the 1984 to 1988 period).

In recent years, export promotion has been given priority and the public sector has made considerable efforts to identify suitable export products and penetrate new markets. This policy has borne fruit as the value of manufactured exports increased from Birr83.7 million in 1980 to Birr157.3 million in 1987 and the range of export products has broadened slightly. Moreover, manufactures as a share of total exports have increased from 8.8 per cent to 19.8 per cent over the same period. The prospects for further expansion of manufactured exports seem bright. Alongside the development of export markets for products originally intended for the domestic market, the government is investigating a proposal to establish a Export Processing Zone to attract export oriented industries financed by foreign capital.

The recent growth of manufactured exports is a bright spot in a picture that is, when taken as a whole, rather gloomy. Since 1984 the corporate pre-tax profits have stagnated and preliminary figures for 1989 indicate that profits fell by more than half. The financial position of the IPEs has always been weak owing to substantial transfers to the government. The corporations' general reserve amounted to negative Birr279.5 million by 1989, as compared with positive Birr143.5 million eleven years before, indicating that accumulated losses from the period 1978 to 1989 amounted to Birr422.8 million. This has left the corporations dependent on the government and banks for the financing of their investment programmes and working capital. By 1989, many of the enterprises were chronically indebted.

Transfers from IPEs to the central government may be identified as the root cause of the IPEs weak financial position. However, their operations have also been handicapped by limited managerial autonomy, conflicting managerial priorities, inadequate accounting procedures, the separation of producers from consumers by the - generally - obligatory mediation of state marketing channels. This has allowed the production of unwanted goods to persist alongside shortages of other products.

Macro-economic factors have played an important role in the industrial sector's deteriorating performance. Funds for investment have been constrained by the low level of domestic

savings and limited inflows of development assistance. The deteriorating current account position has brought foreign exchange requests under ever closer scrutiny and effectively capped the foreign exchange allocation of small-scale enterprises. The early signs of foreign exchange strangulation are all too apparent.

In March 1990, the government proposed reforms that could revitalise the industrial sector. Central planning is to be abandoned in favour a mixed-economy in which the public sector Corporations will operate in fair competition with the private sector. Price controls will be relaxed gradually and the monopoly of the state distribution organisations will be abolished. Firms will be forced to compete for their inputs and their place in the market. This should provide an incentive for public sector management to increase efficiency. The exchange rate may be devalued in steps, increasing competition from imports and providing incentive for firms to export. At the same time, the government will allow management greater autonomy - leading, perhaps, to an enterprise rather than a Corporate managerial structure in the public sector. Public enterprises that are unable to compete effectively may be closed or sold to the private sector.

Meanwhile, the government has taken steps to facilitate greater private sector participation in the industrial sector. New investment codes announced in 1989 and May 1990 have removed most of the legislative and procedural hurdles to private investment in small-scale industry. The government has also sought to attract foreign investment through a refinement of its 1983 Joint Venture Code. As of July 1989, the government dropped the requirement that it should be a majority shareholder in any joint-venture and allows the partner to negotiation the duration of the agreement. In addition, an institutional framework has been established to facilitate applications by prospective foreign partners. Already, the response is considered promising, though no applicant has received a trading licence. Establishment of an export processing zone - presedntly under consideration - would provide an additional incentive to foreign investors.

As for the future, much depends on the successful implementation of the above reform packages and those currently under review. However, managerial reform and the provision of a policy environment conducive to private investment is not a panacea. The pace of industrialisation is intimately linked to the performance of the economy as a whole. The recent collapse of coffee prices will exacerbate the acute foreign exchange shortage and force many enterprises to tighten their belt. Funds for investment and the purchase imported inputs will have to be cut and this will have a detrimental effect on output. The private sector is likely to be worst affected - there is still no indication that the private sector will benefit from greater access to foreign exchange than it has in the past - just at the moment

when the government is trying to instil a spirit of confidence and promote its activities. If Ethiopia is to weather the current crisis, the donor community will have to adopt a more supportive role than it has in the past.

2. GROWTH AND PERFORMANCE OF THE INDUSTRIAL SECTOR

2.1 Growth and structural change

While Ethiopia has long history of artisan manufacturing activity, the first tentative steps towards industrialisation were taken after the completion of the Addis Ababa-Djibouti railway in 1917. Even though Ethiopia remained independent, but for the Italian occupation of Eritrea from the 1880s and the brief Italian occupation of Highland Ethiopia from 1935 to 1941, most of the industrial enterprises were established by foreigners. From the early 1950s the level of foreign investment increased steadily in response to generous tax incentives, the provision of credit by local banks on extremely favourable terms and the high levels of protection afforded to large-scale enterprises. Ethiopian entrepreneurs were not favoured with the same incentives. Consequently, medium and large-scale industry, predominantly owned and operated by foreigners, grew at a much faster rate than Ethiopian owned small-scale industry. Medium and large-scale industry's contribution to GDP increased from just 1.9 per cent of GDP in 1961 to 4.5 per cent by 1972/73, while the contribution of small-scale industry rose from 4.2 per cent to 4.9 per cent over the same period.

This pattern of industrialisation brought few benefits to Ethiopia. Opportunities for Ethiopians were limited to the small-scale industrial sector or to work as unskilled labour in the larger operations; senior managerial and technical posts in the large-scale operations were monopolised by foreigners. The number of jobs created by these large-scale industries was relatively small. and Ethiopian industry was extremely capital intensive for its level of development since tariff protection and low interest loans effectively reduced the real cost of capital intensive projects. Paradoxically, capital utilisation rates were generally very low, largely because industry catered for the relatively small domestic market. Nor did foreign investment contribute to the development of Ethiopia's industrial structure. Most of the projects were concentrated in a narrow range of import substitution activities - food processing, textiles and a few consumer goods manufactured under licence. No attempt was made to broaden the industrial base through the establishment of a domestic engineering capability. All of the machinery used was imported, much of it second hand, and industry was heavily dependent on imported intermediate goods. Tariff protection appears to have been granted on an ad hoc basis, with little consideration given to the efficient allocation of resources or its impact on consumer prices. Moreover, little of these profits were reinvested in the Ethiopian economy. During the ten years to 1972, over 80 per cent of the profits generated by foreign investment in Ethiopia were repatriated.

In 1975 the Ethiopian government nationalised virtually all the large-scale industrial operations and moved towards a centrally planned economic framework that identified the satisfaction of the basic needs of the population as its immediate goal. Large-scale industrial publicly owned enterprises were seen as the means by which this goal could best be achieved and this sector was accorded priority in the allocation of resources. Private sector manufacturing enterprises continued to operate, though they were restricted to a limited range of small-scale manufacturing and handicraft activities.

From 1975 to 1977/78 the level of industrial activity declined slightly. This due to the general disruption of the economy - transport and communications in particular - and material damage to some industrial enterprises during a period of hostilities. A shortage of funds meant that the public sector could not keep pace with depreciation let alone undertake a much-needed investment programme of new projects. At the same time, private sector activity stagnated as entrepreneurs adopted a "wait-and-see" attitude after the implementation of radical policy changes in 1975. Moreover, the transfer of most large scale industrial enterprises to public ownership was not achieved smoothly. Virtually all the expatriate managers and skilled staff left Ethiopia, leaving behind few skilled Ethiopians to take their places. The removal or destruction of factory records did not make the new management's task any easier.

Industry's performance improved rapidly in 1978/79 and 1979/80 - when the sector registered growth rates of 15 per cent and 6.5 per cent - with the announcement of a national development campaign (zemecha) which, in the face of scarce investment funds, relied on the use of existing capacity to increase output. Idle factories were repaired and brought into operation, raw material and manpower constraints were alleviated. By the end of the decade, industrial public enterprises registered capacity utilisation rates of 70 to 100 per cent.

Since the early-1980s, however, there has been little improvement in productivity or capital utilisation rates for the sector as a whole. Instead, the expansion of output has been brought about by new investment. In 1984 gross output of the manufacturing leapt by nearly 20 per cent over the level the previous year, largely because of the inauguration of several large industrial projects - among them the Kombolcha Textile Mill and the Harar Brewery - to mark the tenth anniversary of the Revolution. This was the first generation of new plants established since 1975. The wisdom of these large-scale projects has been called into question on a number of grounds (discussed at greater length later in this chapter):

- a. the preference for modern - and so expensive - machinery has increased dependence on imported capital goods and spare parts, thereby inhibiting linkages with any domestic engineering establishments;
- b. the substantial foreign exchange component of these projects places a heavy burden on the balance payments, in the short-term through imports and the long-term through debt servicing;
- c. large-scale, capital intensive plants are an expensive means of generating employment when compared to medium and small-scale operations;
- d. they exacerbate the shortage of skilled managerial and technical staff;
- e. concentration of investment in a few projects has gone hand in hand with geographical concentration of industrialisation;
- f. large-scale enterprises strain the distribution services, particularly in the Ethiopian context where the transport infrastructure is weak, both in the distribution of products to their markets and the supply of raw materials.

The shortcomings of this investment strategy, together with institutional constraints in the management, supervision and servicing of the enterprises has contributed to the slowing down of growth rates in recent years.

Industrial performance has also been affected by that of the economy as a whole and agriculture in particular. Output of many cash crops has stagnated, in some cases even fallen, and so industrial enterprises have had to contend with irregular and often inadequate deliveries of raw materials. Production in the food products branch in was particularly affected by the disastrous droughts of 1984-85 and 1987-88. While the 1987-88 drought was by no means as widespread as that of 1984-85, no large-scale projects came on stream and so supply constraints were reflected in a fall in output. Moreover, the drought inevitably forced the government to reallocate resources away from industry to more urgent relief and rehabilitation activities.

Despite Ethiopia's pressing economic problems, donors have not stepped in to fill the gap. Liquidity constraints have become more acute as the government, with little room to manoeuvre in its fiscal policy, has required substantial transfers to the central government from all public industrial enterprises.

The deteriorating current account position in recent years has also forced enterprises - particularly those operating in the private sector - to tighten their belts. Foreign exchange budgets have become subject to ever closer scrutiny. While the government has stoically continued with those projects in the pipeline, imports of intermediate goods, spare parts and raw materials for operational enterprises have not kept pace with demand.

Table 2.1: Growth of production value by branch, FY1979 to FY1988
(Per cent change at constant 1978/79 prices)

Branch	1979-81	1982	1983	1984	1985	1986	1987	1988
Food	9.5	-0.1	14.0	4.0	17.1	6.8	-4.8	-1.1
Beverages	10.4	7.0	7.8	6.9	53.7	3.2	7.1	-.6
Tobacco	4.2	18.4	16.8	6.7	44.9	20.6	0.0	10.1
Textiles	11.2	2.3	2.7	0.9	2.1	7.2	8.1	4.0
Leather & shoes	12.6	4.7	5.8	15.2	20.6	8.2	15.5	14.2
Wood & products	9.3	1.5	21.8	9.2	-51.5	5.3	2.1	3.6
Paper & printing	15.9	11.8	5.0	15.7	14.8	6.9	5.4	-5.8
Chemicals	7.8	13.3	14.8	7.7	15.2	-12.2	32.9	-2.2
Non-metallic	23.7	24.9	-4.6	-13.9	99.6	22.4	7.1	17.3
Metal products	8.6	3.1	11.0	5.6	13.7	-5.7	7.2	1.3
Total	10.4	4.7	9.1	5.4	19.8	5.7	6.0	2.8
GDP	4.4	1.2	5.3	-3.6	-7.0	6.7	8.0	...

Source: National Bank of Ethiopia, Quarterly Bulletin, various issues.

Owing to the adverse macro-economic situation and constraints within the industrial sector, the value-added growth rate for large-scale industrial enterprises slowed during the 1980s, averaging 4.8 per cent from 1980/81 to 1986/87. The downturn has been most apparent since 1986. In FY1988 the enterprises under MOI supervision registered an increase in gross output of just 2.8 per cent, the lowest level for a decade. The results for FY1989 are unlikely to show a marked improvement. Growth rates for small-scale industries and handicrafts have trailed behind those for large-scale industry at an average of 2.2 per cent for the 1980/81 to 1986/87 period. This reflects the priority accorded to large-scale industries in the allocation of investment funds and inputs.

A branch level breakdown of growth trends at constant prices can only be calculated for gross output of enterprises supervised by the Ministry of Industry (representing 70.6 of total manufacturing output in 1985/86). This suggests that growth rates have been significantly higher, averaging 7.2 per cent per year over the 1980/81 to 1986/87 period, largely because investment funds have been concentrated in the core industries - food, beverages and textiles - operated by the Ministry of Industry.

Growth rates have varied considerably between branches. The non-metallic products branch has shown the strongest performance, achieving an average annual growth rate of 17.9 per cent over the seven year period. This rapid increase in output was achieved by the construction of a new cement factory at Muger which nearly tripled cement production in 1984/85. Output increased by an average of 11.8 per cent per year in the beverage industry, again largely because of the installation of increased capacity (of which the Harar Brewery, commissioned in 1984, is the most important). The tobacco, beverages, chemicals and leather processing and products branches also achieved growth rates in excess of 10 per cent (13.5, 11.8, 11.1 and 10.9 per cent respectively). In contrast, the established branches of manufacturing, food products and textiles, performed relatively poorly, with growth rates of 3.5 and 6.3 per cent, in spite of substantial investment in such projects as the Kombolcha Textile Mill. Similarly, the metal products and engineering branch has performed below the sectoral average, with an average annual increase in output of 5.7 per cent. Its performance is likely to improve in the near future as recent projects - notably the Akaki Spare Parts Factory - step up production towards full capacity.

Divergent growth rates have brought about a gradual change in the structure of manufacturing value added in recent years (Table 2.2). In 1965, the industrial sector was dominated by the food processing, beverage and textile branches which, together, accounted for nearly 75 per cent of manufacturing value added. Their share had hardly fallen by 1980/81, largely

because there had been very little investment in the period immediately after the Revolution and the government still gave priority to the production of basic consumer goods on the basis of import substitution. It was only after the promulgation of the Ten Year Perspective Plan (FY1984-FY1994) that a concerted effort was made to diversify the industrial structure, with particular attention being given to the development of a basic (chemical, non-metallic minerals and engineering) industrial capability. However, Ethiopia has yet to make significant progress towards the creation of a broad industrial base. Only the chemical branch had increased its share of total manufacturing value added to more than ten per cent by 1985/86 had fallen slightly, and this was due, in large part, to the oil refinery's contribution. Moreover, the most recent statistics, which cover MOI supervised industries only, reveal that the marked predominance of the "traditional" industries persists. Whereas basic industries accounted for 18.5 per cent of manufacturing value added, the "traditional" industries contributed 56.5 per cent.

Table 2.3: Structure of value added by industrial branch, selected years
(Per cent shares)

Branch	Medium and Large scale industry				MOI only	
	1965	1976/77	1980/81	1985/86	1986	1988
Food	30.0	18.4	31.1	23.8	20.8	19.3
Beverages	15.0	14.3	10.7	14.6	14.8	12.1
Tobacco	3.0	7.0	5.8	4.5	4.7	7.6
Textiles	29.0	30.8	28.5	20.0	24.7	25.1
Leather & products	5.0	6.5	6.0	4.0	4.6	10.2
Wood & products	3.0	3.4	2.7	3.0	1.1	1.1
Paper & printing	2.0	4.3	4.2	8.0	9.0	6.4
Chemicals	3.0	8.6	5.8	12.0	9.5	9.6
Non-metallic	5.0	2.4	1.2	3.5	4.9	3.1
Metal & products	5.0	4.2	5.2	6.6	5.9	5.4

Source: CSA, Results of the Survey of Manufacturing Industries, various issues;
World Bank, Ethiopia Industrial Sector Review, Report No.5301 ET,
December 1985; Ministry of Industry, Statistical Bulletin, various
issues.

The top heavy structure of Ethiopian industry is even more apparent if the distribution of value added by product end use is examined (Table 2.3). Data for the Ministry of Industry supervised corporations reveals that the 103 of the 165 enterprises were engaged in the manufacture of light consumer goods and these accounted for 67.7 per cent of total MVA. The second most important end use is intermediate goods, with 36 enterprises engaged in the production of inputs for agriculture, construction or the industrial sector itself. These enterprises accounted for 23.5 per cent of MVA. By the far the most important corporations engaged in the manufacture of intermediate goods were the National Leather and Shoe Corporation, Ethiopian Cement and the Share Companies accounting for 33.6, 12.7 and 12.4 per cent of the total output respectively. Both consumer durables and engineering made a negligible contribution to MVA.

Table 2.3: Value added of public industrial enterprises by end use, 1968
(Per cent shares)

Corporation	Light consume goods	Consumer durables	Inter- mediate goods	Engineering goods	Service rendering
Ethiopian Food	100.0	-	-	-	-
Ethiopian Sugar	100.0	-	-	-	-
Ethiopian Beverages	79.9	-	20.1	-	-
National tobacco	100.0	-	-	-	-
National Textiles	88.7	-	11.3	-	-
National Leather	38.1	-	61.9	-	-
Ethiopian Printing	9.3	-	3.9	-	86.8
National Chemical	58.0	-	39.4	2.6	-
Ethiopian Cement	0.0	-	100.0	-	-
National Metal works	5.8	63.3	32.5	1.6	-
Share Companies	23.2	-	76.8	-	-
Total MOI	67.7	3.8	23.5	0.1	5.0

Source: Ministry of Industry, Statistical Bulletin, June 1969

With the change to a mixed-economy in which profit is the guiding principle of new investment, Ethiopia's industrial structure is likely to change. Private investors are unlikely to be interested, in the immediate future at least, in large-scale engineering and basic industries which require substantial investments with long pay-back periods. Instead, they are likely to concentrate on consumer oriented industries, where scarcity rents offer attractive profit margins. Such industries are likely to follow the lines of import substitution and may be established by foreign enterprises, possibly as joint ventures, wishing to take advantage of Ethiopia's potentially large, but poor, market. If Ethiopia's industrial structure is to evolve along the lines mapped out by recent development plans - and clearly there is a need for such development as well as growth - some government commitment will be required. This may take the form of direct investment in new public sector enterprises, or mixed enterprises and joint ventures where the government absorbs some of the risk of a substantial capital outlay on the part of private investors. The government may also try to influence private sector investment by indicative planning, by, for instance, preparing feasibility studies or offering well-targetted tax concessions. Yet even if the government takes an active role in such indicative planning, the development of a broad industrial base is likely to be a much longer process than under the central planning system.

2.2 Ownership and size distribution

Industrial Public Enterprises (IPEs) dominate the industrial sector in Ethiopia. In 1985/86, they accounted for 96 per cent of the gross production value of medium and large-scale enterprises (those using power driven machinery and employing 10 or more persons), 95 of the value added, 93 per cent of employment and 97 per cent of the fixed assets (Table 2.4). This pattern has changed little since February 1975, when the government nationalised 72 of the largest manufacturing and commercial enterprises and assumed a majority interest in another twenty-nine. Subsequently, the government bought out the private interest in all but four of these "share companies".

In 1988, 165 of the 215 IPEs were supervised by the Ministry of Industry and organised into eleven Corporations (see Section 4.3). The 50 remaining IPEs (accounting for 26 per cent of the public sector's gross production value, 29 per cent of its value added and 11.3 per cent of its employment in 1985/86) are supervised by other executing Ministries: meat packing and animal feeds under the Ministry of State Farms, saw mills under the Ministry of Agriculture and construction materials enterprises (with the exception of the cement industry) under the Ministry of Construction.

Table 2.4: Public sector share in manufacturing industry/, 1985/86
(Percent shares)

Branch	Number of establishments	Gross value of production	Value Added	Employment	Fixed Assets
Food	46	96	96	91	97
Beverages	68	98	97	97	99
Tobacco	100	100	100	100	100
Textiles	47	94	98	97	98
Leather & shoes	38	97	96	92	95
Wood & products	35	88	89	79	73
Paper & printing	38	92	93	86	74
Chemicals	60	95	95	92	93
Petroleum	100	100	100	100	100
Non-metallic	48	95	95	88	99
Metal products	55	72	70	79	83
Total	50	96	95	93	97

a/ All public sector enterprise and a sample of 199 private enterprises.

Source: CSA, Results of the Survey of the Manufacturing and Electricity Industries (1985/1986), January 1989.

The "Declaration on the Economic Policy of Socialist Ethiopia" of February 1975, assigned the private and public sectors very different roles in the economy. Within the industrial sector, basic industries and export processing were reserved for the state or joint-ventures between public and foreign private capital. Domestic private sector investment was restricted to a range of small-scale industries^{4/}. Later, Proclamation No. 76/1975 fixed a ceiling of Birr500,000 for private investments by Ethiopian nationals (raised to Birr1 million in April 1985). No restriction was placed on the number of workers a private enterprise might employ, but enterprises employing more than ten persons were required to recruit their workers through the Ministry of Labour and Social Affairs. As a result of these controls, the industrialisation paths followed by public and private sector industries have diverged.

Large-scale, capital intensive projects predominate in the public sector. All but ten of the public sector enterprises employ more than 50 persons with an average of 418 workers and fixed assets of Birr3.4 million per enterprise in 1985/86. These large scale enterprises account for 97 per cent the industrial sector's gross production value (Table 2.5). Of the 165 enterprises under MOI supervision, 53 employ more than 400 workers and 17 employ more than 1,000. In contrast, the average work-force of the 199 private enterprises covered by the 1985/86 Central Statistical Office survey was 30.5 employees and the average value of fixed assets was Birr113,000. According to a 1987 directory of manufacturing establishments employing more than 10 persons, only 32 of the 404 private enterprises registered employed more than 50 workers and the average work-force was 23 employees (see Table 2.6). The vast majority of private sector enterprises employ fewer than ten persons. According to a 1984/85 survey of 7,684 SSIs undertaken by HASIDA, the government agency which supervises SSIs (see Section 4.2), the average size of these enterprises was less than five employees. Owing to the different institutional status and size characteristics of private enterprises, this sector is discussed separately in Section 2.9.

4. The activities specifically identified as the domain of the private sector under the Declaration were: food processing, quarrying, baking, grain-milling and oil seed pressing, manufacture of wood and metal products, weaving, knitting, sewing and tailoring, and handicrafts.

Table 2.5: Size distribution of manufacturing enterprises/, 1985/86

Branch	<u>Number of establishments</u>				<u>Percent of gross production value</u>		
	Total	10-19	20-49	>50	10-19	20-49	>50
Food	125	19	47	59	0.8	4.3	95.0
Beverages	30	2	4	24	0.1	1.2	98.7
Tobacco	2	-	-	2	-	-	100.0
Textiles	60	17	6	37	0.4	.4	99.2
Leather & shoes	26	7	4	15	0.8	1.2	98.1
Wood & products	31	8	11	12	2.3	6.2	91.5
Paper & printing	29	5	10	14	1.7	3.8	94.5
Chemicals	32	4	5	22	1.0	1.1	98.0
Non-metallic	33	7	7	19	0.8	3.4	95.8
Metal products	34	6	9	19	0.5	3.4	96.1
Total	402	75	103	223	0.6	2.1	97.3

a/ All public sector enterprise and a sample of 199 private enterprises.

Source: CSA, Results of the Survey of the Manufacturing and Electricity Industries (1985/1986), January 1989.

Table 2.6: Size distribution of private sector enterprises^{a/}, 1985/86

	10-19	20-29	30-49	50-99	100 or more
Establishments	249	78	45	27	5
Employment	3,243	1,901	1,672	1,750	772

a/ Enterprises employing more than 10 persons and using motive power.
Coverage is incomplete within this category owing to a printing omission of approximately 250 enterprises.

Source: MOI, Directory of Manufacturing Establishments, May 1987.

Special Decree No.9/1989 broadened the range of industrial investments open to entrepreneurs within the private sector, increased the capital ceiling to Birr4 million for projects owned by business associations, offered incentives to investors and opened the door to new forms private ownership (see Section 4.3). In the first five months after promulgation of the decree, the licensing authorities received 1,200 applicants from prospective investors. If only half of these projects are implemented, the private sector's contribution to output and employment in the manufacturing sector will rise significantly in the near future.

The reform package announced in March 1990 - embodied in Special Decree No.17/90, promulgated in May 1990 - opened the gates even wider to private sector investment by abolishing the state's monopoly in certain sectors of manufacturing and removing the ceiling on investment altogether. It was also made clear that investment by expatriate Ethiopians would be welcomed. This will provide access to considerable funding from abroad, both from Ethiopians wishing to secure employment and income for relatives still resident in the country and those that see Ethiopia as an attractive investment opportunity. It is still too early to assess how successful the government's initiative will prove in attracting private sector investment through deregulation. Nevertheless the reforms have provided an opportunity and it may be expected that the number of private sector enterprises - mostly small-scale - will proliferate in the near future. The only restrictions on private sector investment that remain cover investment in the defence industry, post and telecommunications, radio and television broadcasting services, air, rail and large-scale shipping. These activities are reserved for the state. A number of other activities - electric light and power, banking and insurance, supply of potable water and tobacco processing - are subject to close government supervision, requiring the approval of the Council of Ministers before any approval can be granted. Otherwise the private sector has been given a free rein throughout the economy, subject to the formality of a trading licence.

These measures are likely to change the balance of ownership in the manufacturing sector in favour of the private sector. This trend may be reinforced if the government implements its policy recommendation that loss making parastatals in the manufacturing sector should be broken up and privatised. Obviously the procedure of privatisation will take some time to formulate as will the identification of enterprises suitable and susceptible to private sector ownership. However, given the poor financial position of many of the state owned manufacturing enterprises privatisation is a realistic possibility in the near future. Those enterprises most likely to be sold off - and bought - are the smaller-scale operations in the consumer oriented sector.

In line with the government's social objectives, cooperatives have been encouraged (see Section 4.2) but, until recently, other forms of capital association were restricted. The broadest form of association available at the end of 1989 was the partnership. There was no provision for financial institutions to subscribe to equity in private sector enterprises and joint-ventures have, in practice, been restricted to associations between the state and foreign partners. Horizontal and vertical integration within the private sector has been prevented by the limitation of one trading licence to each individual - though extended families have managed to circumscribe this restriction and create larger units with complex linkages.

Recent legislation (Special Decree No.9 and No.11/1989) lifted some of these restrictions. Foreign investors were allowed to select partners from the domestic private sector, though the state would still hold an interest in such ventures. Wider forms of "business association" are discussed though not defined. Perhaps this will provide an opportunity for wider forms of equity participation. The legislation also permitted each individual or "business association" to hold multiple trading licenses within capital ceilings of Birr4 million and Birr8 million respectively. Clearly, the legislation provided for broader forms of capital association but it failed to provide them with a legal basis.

This criticism was answered by the promulgation of "Special Decree on Investment No 17/1990". The new decree permits foreign companies to form joint-ventures with the partners of their choice, without government interference. It also allows investors to form ordinary, general and limited partnerships, joint ventures, share companies and private limited companies. All forms of capital association are now permissible.

2.3 Investment

Successive development plans have set ambitious targets for investment in the industrial sector (Table 2.7). These targets have been revised in medium-term and annual plans to reflect the available financial resources. The average annual investment in the TYP (FY1987-FY1989), for instance, was 42 per cent lower than originally anticipated in the TYPP (FY1985-FY1995) owing to the diversion of financial resources to famine relief and rehabilitation following the 1984-85 drought. Implementation rates, based on annual plans, have been relatively high, averaging 67.7 per cent of the planned annual investment of Birr216.5 for the period FY1984-88, though they dropped to 46.5 per cent in FY1986, a drought year. The targets for the FYP (FY1990-FY1994) are even more ambitious than those of its predecessors. It anticipates an annual average investment of Birr759.4 million, peaking at Birr1,074.6 million in FY1991. In view of the growing budget deficit and the acute shortage of foreign exchange, these targets will probably have to be revised downwards in the near future.

The new market-oriented policy framework revealed in March 1990 will also affect the pattern of investment. While the government may decide to go ahead with the investment programmes proposed by the publicly owned Corporations, particularly where these investments are to be funded by external sources, it may prefer to limit public sector investment to those projects that would not be attractive to the private sector but may be considered important in terms of industrial development. In the absence of clear policy decision on the government's investment strategy for the near future, this section - and subsequent chapters - assumes that the projects identified will remain priorities and the investment targets are still valid.

Following the "Declaration on Economic Policy of Socialist Ethiopia" in 1975, priority was given to investment in industrial projects aimed at satisfying the basic needs of the population. Projects in the food processing, beverages and textiles sectors received over 90 per cent of total investment in the period FY1976 to FY1984 (Table 2.7). It was only in 1984, with the preparation of the TYPP (FY1985-FY1994), that attention turned to diversifying the industrial base through the development of basic industries (chemicals, non-metallic minerals, metals and engineering) which would strengthen linkages within the industrial sector, reduce dependence on imported inputs and increase the range of industries processing domestic resources. As a secondary objective, export oriented industries, such as the leather and leather products branch, were also to receive a larger share of investment. Even so, those branches serving basic needs and domestic consumers were still allocated over 40 per cent of investment for the ten year planning period and an even larger share in the plans early years.

In practice, the distribution of investment in the first three years of the TYYP, FY1985 and FY1988, has favoured the metal and

engineering, non-metallic mineral products and textiles branches to a much greater extent than originally anticipated. This reflects the momentum of a few large-scale projects (such as the Akaki Spare Parts Factory) which have gone some way to strengthening the industrial sector's resource base and internal linkages. The principal source of manufactured exports, the leather and leather products branch, has, on the other hand, been allocated an extremely small share of available resources.

Under the Five Year Development Plan (FY1990-FY94), export oriented industries will receive a larger allocation of investment funds in line with the priority accorded to the development of this sector. However, investment in basic industries (notably chemicals, metals and engineering) will be far smaller than anticipated at the beginning of the TYYP. Instead, investment will be concentrated in those sectors where the industrial base is already comparatively strong (food processing and textiles in particular) and the utilisation of domestic mineral resources (non-metallic minerals). Consequently, while investment during the TYYP period as a whole will diversify the industrial sector's resource base, it is unlikely to achieve the goal of stronger intra-sectoral linkages; the problem of import dependence for intermediate and capital goods will continue.

Table 2.7: Investment in public sector industrial development projects, FY1976 to FY1994
(Percentage shares)

Branch	Actual 1976-84	Planned 1985-94	Planned 1985-88	Actual 1985-88	Planned 1990-94
Food	37.2	25.0	32.4	10.1	35.8
Beverages	29.0	3.5	3.0	2.1	6.8
Tobacco	1.2	.6	1.3	.5	2.3
Textiles	26.6	14.7	10.7	34.3	18.8
Leather & shoe	1.1	5.3	7.2	1.4	7.2
Wood & products	...	2.0	4.1	.0	.3
Paper & printing	...	.8	1.1	.5	10.4
Chemical	1.4	22.2	16.4	1.5	1.0
Non-metallic	3.0	11.2	10.1	16.7	14.0
Metal products	0.5	14.7	11.6	33.1	2.7
Science & technology	...	...	...	...	.7
Total (Million Birr)	317.6	5,074.2	799.8	563.8	2,923.7

Source: ONCCP, Ten Year Perspective Plan (FY1985-FY1994), 1984;
MOI, Statistical Bulletin, VI, June 1989; MOI, Five Year Plan Document (FY1990-FY1994), 1989 (in Amharic).

New industrial projects have absorbed the lion's share of investment resources during the first four years of the TYYP, FY1985-FY1988, and will continue to do so during the FYP (FY1990-FY1994) (Table 2.8). Expansion projects accounted for only 14.6 per cent of total investment in the period FY1985-FY88, rising to 23.6 per cent under the FYP. Government policy is, in effect, to expand the industrial infrastructure as fast as possible to take advantage of import substitution and domestic resource utilisation opportunities. While this is likely to strengthen the employment generation effect of investment in large scale projects, it is unlikely to be as cost effective a means of increasing output as investment in expansion, which builds on established infrastructure, managerial and technical capabilities. Furthermore, the allocation of substantial sums to new large-scale projects substantially increases the risk factor in calculating the return on investment (ROI) and capital employed (ROCE) and aggravates the acute shortage of skilled managerial and technical personnel (see Section 5.1).

Another matter of concern, given the age of the equipment stock in use (see Section 2.6), is the relatively small proportion of investment resources allocated to replacement (including rehabilitation, renovation and removal of bottle-necks). During the period FY1985 to FY1988 expenditure on replacement amounted to 26.7 per cent of total capital expenditure. However, expenditure per unit value of fixed assets in Birr varied from a low of Birr0.046 in 1986 to a high of Birr0.083 in 1988. This level of replacement expenditure is barely enough to keep pace with depreciation and would be inadequate to maintain the productive capacity of relatively new machinery. In the Ethiopian context it results in frequent breakdowns, prolonged equipment down-times and considerable expenditure on spare parts. Under the FYP the allocation for investment in replacement will double in absolute terms but fall to just 10.7 per cent of total investment expenditure. As a result, the deterioration of the existing - and newly purchased - capital stock is likely to accelerate.

Table 2.8: Actual and planned investment in the public sector corporations by type of investment, FY1984 to FY1994 (Million Birr)

Type of investment	Actual 1984-88		Planned 1990-94	
	Birr	Percent	Birr	Percent
Development projects	510.8	76.1	3,199.6	84.3
- Expansion projects	(93.1)	(14.3)	(895.3)	(23.6)
- New projects	(417.4)	(59.9)	(2,304.3)	(60.7)
Replacement	186.4	26.7	405.6	10.7
Science & technology	...	...	191.7	5.0
Total	697.2	100.0	3,796.9	100.0

Source: MOI, Statistical Bulletin, VI, June 1989; MOI, Five Year Plan Document (FY1990-FY1994), 1989 (in Amharic).

The absence of a developed engineering branch renders the economy heavily dependent on imported capital goods (see Section 2.6). During the period FY1984 to FY1988, 51 per cent of all expenditure on capital investment went towards purchases in foreign exchange (Table 2.9). The completion of the Akaki Spare Parts Factory in 1988 will help to reduce the expenditure of foreign exchange on spare parts, but virtually all of the machinery needed for new and expansion projects and replacement will still have to be imported. Indeed, the foreign exchange component of investment under the FYP is expected to increase slightly. Given the government's tight foreign budget, and the anticipated decline in foreign exchange receipts in the near future, planned investment is likely to be subject to considerable slippage during the FYP. This strengthens the case for the careful identification of sectoral priorities and the selection of projects on the basis of their projected ROI and ROCE ratios.

Only 5.3 per cent of investment during the period FY1984 to FY1988 has been financed out of the corporations' own funds (Table 2.10). Liquidity constraints (see Section 2.5) and the depletion of general reserves to finance loss making enterprises leave the corporations dependent on government and bank finance. If the corporations are to double the proportion of total investment financed out of their own funds, as the FYP anticipates, the structure of corporation taxes and supplementary charges will have to be reformed so that they can retain a larger proportion of their earnings.

Table 2.9: Actual and planned foreign exchange component of capital expenditure by the public sector, FY1984 to FY1994 (Million Birr)

Type of project	1984-88			1990-94		
	Total	Foreign Exchange	Per-cent	Total	Foreign Exchange	Per-cent
Development projects	722.5	381.2	52.8	3,199.6	1,759.3	55.0
- Expansion projects	n.a.	n.a.	n.a.	2,304.3	1,306.0	56.7
- New projects	n.a.	n.a.	n.a.	895.3	453.4	50.6
Replacement	227.5	102.5	45.1	405.6	167.1	41.2
Science & technology	n.a.	n.a.	n.a.	191.7	109.2	57.0
Total	950.0	483.7	50.9	3,796.9	2,035.6	53.6

Source: MOI, Statistical Bulletin, VI, June 1989; MOI, Five Year Plan Document (FY1990-FY1994), 1989 (in Amharic).

Table 2.10: Source of investment funds for Corporation development projects, FY1984 to FY1994 (Million Birr)

Source	Planned 1984-88		Actual 1984-88		Planned 1990-94	
	Birr	Percent	Birr	Percent	Birr	Percent
Government budget	442.7	36.6	247.5	34.1	1,163.1	30.6
Own Fund	37.9	3.1	38.2	5.3	438.7	11.6
Local bank loan	294.9	24.4	162.6	22.4	912.7	24.0
Suppliers credit	...	...	...	...	349.4	9.2
Foreign loan	405.0	33.5	256.7	35.4	872.7	23.0
Foreign grant	28.4	2.4	20.5	2.8	60.3	1.6
Total	1,208.9	100.0	725.5	100.0	3,796.9	100.0

Source: MOI, Statistical Bulletin, VI, June 1989; MOI, Five Year Plan Document (FY1990-FY1994), 1989 (in Amharic).

Central government and local banks provided over half of the investment finance over the five year to FY1988. This puts a heavy responsibility on the MOI project assessment department since institutional mechanisms for the allocation of resources replace the market, which, if a larger proportion of projects were financed out of the corporations' own funds, would ensure that investible resources were available only to profitable enterprises. While the effective centralisation of capital budgets in the government's purse should allow close management of the economy's investible resources, this advantage is lost by the absence of consolidated accounts for the public sector covering flows of funds between the government, corporations and banking system.

During the period FY1984 to FY1988, 35.4 per cent of the investment expenditure was financed by foreign creditors. Recourse to foreign financing is a regrettable necessity in view of Ethiopia's limited domestic savings (see Section 1.2). However, faced with a growing debt servicing burden and tightening exchange budget it is desirable to keep such financing to a minimum and ensure that it is secured at concessionary terms (through suppliers credits and donor sources). There is a strong case for donors to increase the value of grants to industrial sector which, to date, have made only a marginal contribution to total investment. Furthermore, if external financing is not to result in a net drain in foreign exchange, care should be taken to ensure that the new servicing obligations are matched by growth in the value of the manufactured exports.

No comprehensive data on the level of private sector investment in the industrial sector is available. Under the TYP private sector investment was expected to average Birr16 million per year (3 per cent of total investment) though the estimate rose to Birr33 million per year (11 per cent of the total) under the TYP (FY1986-FY1989). Actual investment in new private sector projects licensed by HASIDA has increased from around Birr1 million in FY1983 to Birr20 million in FY1988, though this excludes investment in replacement and informal sector projects. The level of investment is expected to increase sharply following the introduction of incentives and the removal of barriers to entry in July 1989 (see Section 4.3).

According to a 1985 HASIDA survey 81 per cent of private sector investment is financed from private savings and only 19 per cent from bank loans. Many private sector traders benefit from high liquidity, generated from the substantial margins earned in the parallel market. Where the policy environment is favourable, these traders are clearly willing to invest their liquid assets in small-scale manufacturing enterprises. On the other hand, the financial and institutional constraints of a banking system geared to the needs of large-scale public sector projects rather than small-scale industry (see Section 4.2), have made it very difficult

for businessmen to secure long-term credit even for the expansion of an enterprise with a healthy financial record. The degree of dependence on imported capital goods is probably lower than that of the public sector and is usually financed through unofficial sources of foreign exchange (see Section 4.3).

2.4 Employment

Industry is not a major employer in Ethiopia. In FY1986 medium and large-scale industrial enterprises employed a total of 90,845 persons. This represents less than 0.5 per cent of the total economically active population and 5.9 percent of the economically active population resident in urban areas. While employment in manufacturing has increased by over 50 per cent in the ten year period to FY1986, providing, on average, 3,162 additional jobs each year, this has made no impact on the vast numbers of urban unemployed (see Section 5.1).

Public sector enterprises account for over 90 per cent of employment in large and medium-scale manufacturing enterprises - and MOI supervised industries about 85 per cent - a proportion that has remained fairly constant since FY1976 (Table 2.11). The distribution of employment between branches of manufacturing has also changed little over this period. Although the predominance of the textiles branch has fallen slightly as employment in paper and printing, beverages, leather and shoe, metalworking and food processing branches increased faster than the sectoral average, it remains by far the most important employer, accounting for about 40 per cent of the industrial workforce.

Table 2.11: Permanent employees by branch, FY1976 to FY1986

Branch	1976		1981		1986		Percent change 1976-86
	Number	Percent	Number	Percent	Number	Percent	
Food	10,724	18.1	15,502	19.6	18,216	20.1	69.9
Beverages	3,625	6.1	6,194	7.8	8,261	9.1	127.9
Tobacco	662	1.1	849	1.1	1,017	1.1	53.6
Textiles	26,044	44.0	32,305	40.8	35,782	39.4	37.4
Leather & shoe	2,708	4.6	4,537	5.7	5,771	6.4	113.1
Wood & products	4,242	7.2	5,237	6.6	2,581	2.8	-39.2
Paper & printing	1,634	2.8	3,776	4.8	4,443	4.9	171.9
Chemical	4,511	7.6	5,590	7.1	7,142	7.9	58.3
Non-metallic	3,338	5.6	2,994	3.8	4,535	5.0	35.9
Metal products	1,734	2.9	2,107	2.7	3,187	3.5	85.8
Total	59,222	100.0	79,091	100.0	90,845	100.0	53.4
Public sector	55,105	93.0	71,240	90.1	84,783	93.3	53.9
Private sector	4,117	7.0	7,851	9.9	6,062	6.7	47.2

Source: CSA, Results of the Survey of Manufacturing Industry, various issues.

Several studies have argued that staffing levels at enterprise level are inflexible^{5/}. Certainly, the terms of the Labour Proclamation (No.64/1975), offer workers' considerable protection against redundancy: prior notice of up to three months, powers of appeal, automatic severance pay of two months salary, redundancy compensation of one month's salary for the first year of employment and one third of a month for the remaining years. Furthermore, in the case of MOI supervised enterprises, changes in staffing levels would have to be justified before the Ministry's Manpower Department. These procedures, backed by an implicit understanding that one of the enterprise's objectives is employment generation, do discourage employers from laying workers off to cut costs during temporary lulls in production. Nevertheless, statistics compiled at Corporation level (see Table A-0) do show periodic reductions in staffing level that are greater than one might expect from natural wastage through retirement.

Besides, enterprises can achieve some degree of flexibility by hiring temporary workers and contractual staff to meet seasonal or temporary changes in their work load. In 1988, MOI corporations hired 16,971 temporary workers, one for temporary worker for every 4.6 permanent employees. Half of these were engaged by the Sugar Corporation, with a ratio of about one temporary worker for each permanent member of staff, though the ratio was also relatively high in the Ethiopian Beverage Corporation (5.4), the Ethiopian Food Corporation (3.9), and National Tobacco and Matches (1.3).

In practice, inflexibility arises from supply rather than demand constraints. While there are plentiful unskilled manpower resources, the Ethiopian economy faces an acute shortage of skilled and professional workers (see Section 5.1). ONCCP operates a Central Allocation System which rations the supply of graduates to the Ministries on the basis of the requests they submit and the government's sectoral priorities. The MOI's allocation of skilled managerial and technical staff has, consistently, been lower than the number requested (see Table A-0). As a result, the skills profile of the industrial sector is biased heavily towards the unskilled and semi-skilled categories (Table 2.12). Although the proportion of professional staff has increased steadily in recent years, professionals still only accounted for 1.3 per cent of the workforce in 1985 and all skilled categories only 10.7 per cent. Managerial and executive staff are well qualified (66 per cent holding degree or diploma qualifications in 1985), so too are most of the administrative staff, but the skills profile lacks depth. In 1985, only 14 per cent of production workers had vocational training, while the educational achievement of 38 per cent was limited to being able to read and write and only 22 per cent had received secondary education.

5. Notably World Bank, Ethiopia Industrial Sector Review, Report No 5301-ET, December 16, 1985, page 20.

Within the private sector the skills shortage is even more acute. The ONCCP allocates all graduates and diploma students to the public sector enterprises for their first job and these staff are unable to transfer without their employers consent. Consequently, highly qualified personnel are directed away from private enterprise. Technical school students have recently been allowed to find employment through labour exchanges but they are discouraged from taking

Table 2.12: Ministry of Industry workforce by skill category, selected years

Skill category	1979		1983		1985	
	No.	Percent	No.	Percent	No.	Percent
Professional	476	.7	754	1.0	1,005	1.3
Semi-professional	1,715	2.7	2,521	3.3	2,709	3.5
Skilled	3,707	5.8	4,442	5.8	4,566	5.9
Semi-skilled	9,284	14.5	12,514	16.2	12,925	16.7
Unskilled	48,798	76.3	57,019	73.8	56,191	72.6
Total	63,980	100.0	77,250	100.0	77,396	100.0

Source: Data provided by the Ministry of Industry.

up posts in the private sector by lower wages - though skilled production staff in such fields as metal working and printing are paid a premium by private sector employers - and perceived job insecurity. Both public and private sector management regards the shortage of skilled staff as one of the main hurdles to industrialisation in Ethiopia, particularly in the development of industries using modern technology.

In Ethiopia, technological development is seen as a sine qua non of industrial progress. Ethiopia's industrialisation strategy has favoured large, capital intensive projects and the introduction of "advanced and complex" technology^{6/}. Consequently, the cost of employment creation through the construction of new industrial plants has been extremely high by international standards, averaging Birr33,309 (\$16,000) per permanent employee over the period FY1975 to FY1984. Investment costs per employee have increased rapidly in recent years, reaching Birr176,146 (\$84,685) for those projects in progress in June 1989 (Table 2.13). The level of investment is particularly high in the case of the cement industry, where a Birr180 million project (the Muger Cement Works) under way in June 1989 is expected to generate only 117 jobs at a cost of Birr1.5 million each. However, the cost of job creation appears to be rising across the board. A major project in the textile sector, for instance, the Kombolcha Textile Mill, which began operations in 1984, generated 3,460 jobs for an investment of Birr180 million, at a cost of Birr50,000 each, while investment per employee has increased to Birr123,000 for the two mills currently under construction at Arba Minch and Awassa.

The wisdom of a capital intensive path of industrialisation in the Ethiopian context may be questioned. Prevailing levels of urban unemployment are high even by African standards. Investment in smaller, lower technology projects would certainly increase labour absorption within the industrial sector and is a far more cost-effective means of job creation. Modern technology has to be imported, so do the spare parts and many of the intermediate products it uses, thereby increasing the industrial sector's import dependence. Labour costs are lower in Ethiopia than in most of the developing world and so the economic justification for capital intensive production strategies is weak. Furthermore, modern technology offers little or no opportunity for the substitution of labour in production and so substantial investments in capital intensive plants amount to a long term commitment to this path of development. In contrast, a labour intensive production process can easily be upgraded.

6. ONCCP, Ten Year Perspective Plan (1984-1993), 1984, page 67.

Table 2.13: Employment generated per unit of expenditure in new development projects implemented (FY1976 to FY1984) and in progress (June 1989)

Branch	Projects implemented 1976-84			Projects in Progress 1989		
	Investment (Mn Birr)	Jobs created	Investment per Job (Birr)	Investment (Mn Birr)	Jobs created	Investment per Job (Birr)
Food	118.3	3,834	30,856	...	...	...
Beverages	92.1	1,581	58,254	88.8	750	118,407
Tobacco	3.7	70	52,857	...	...	...
Textiles	84.4	2,796	30,186	361.5	2,930	123,365
Leather & shoe	3.5	633	5,529	9.1	69	131,884
Wood & products	...	...	...	...	...	...
Paper & printing	...	...	...	16.5	195	84,708
Chemical	4.6	380	12,105	48.2	248	194,359
Non-metallic	9.5	70	135,714	180.5	117	1,543,120
Metal products	1.5	170	8,824	194.8	797	244,440
Total	317.6	9,535	33,309	899.4	5,106	176,146

Source: Policy and Research Division (MOI), The Evolution of Manufacturing Industry in Ethiopia, August 1986; and MOI, Statistical Bulletin, VI, June 1989.

However, much of Ethiopia's industrial stock was purchased second hand and is already fully depreciated. For this reason, the capital intensity of production, as measured by the net book value of assets, is not excessive by international standards (Table 2.14). During the late 1970's the ratio of capital per employee fell as a result of higher capital utilization, resulting in some labour absorption, but also as a result of depreciation of the capital stock. The spate of new investments in the early 1980s led to a 30 per cent increase in the level of capitalization in the public sector between FY1980 and FY1986. Much of this increase was due to the massive investments in the cement industry and, to a lesser extent, in the metalworks branch. Yet, despite such large scale projects as the Kombolcha textile mill, the levels of capitalization in the leading branches of the industrial sector - textiles, food processing, beverages and leather and leather products - continued to fall as the combined effects of depreciation and labour absorption exceeded the infusion of new capital.

Levels of capitalization are significantly lower in the private sector than they are for the public enterprises. This reflects the age of the capital stock and the limited funds available for the purchase of new equipment. The removal of restrictions on private sector investment, the raising of the capital ceiling and the provision of incentives for enterprises to purchase new equipment under recent legislation (see Section 4.3) will be followed by significant investment and capitalization in the near future.

Table 2.14: Book value of fixed assets per employee, FY1981 to FY1986
(Birr)

Branch	1981		1984		1986	
	Public	Private	Public	Private	Public	Private
Food	12,275	1,618	10,529	2,154	10,170	2,929
Beverages	8,874	3,289	8,980	3,301	5,263	2,087
Tobaccoa/	---	---	3,037	-	6,179	-
Textiles	3,465	2,004	2,908	2,081	2,114	1,402
Leather & shoes	5,921	2,013	3,989	1,776	1,644	1,260
Wood & products	3,591	1,212	1,972	1,790	1,875	2,648
Paper & printing	4,754	4,167	4,101	4,337	4,012	5,199
Chemicals	6,993	9,273	5,105	8,027	5,833	5,254
Non-metallic	9,080	2,632	5,071	1,651	43,812	2,618
Metal products	5,103	8,243	3,305	6,622	11,170	8,330
Total	6,335	2,765	5,451	2,957	8,199	3,656

a/ Includes tobacco for FY1981.

Source: CSA, Survey of Manufacturing Industries, various issues.

Wage levels are extremely low in Ethiopia. Average wages in the industrial sector were Birr234 (\$112.5) per month in FY1986 and Birr285 (\$137) for public sector employees in FY1988 (Table 2.15). Although few employees earn the minimum wage of Birr2 per day, which has remained unchanged since it was introduced by the Labour Proclamation in 1975, about 35 per cent of industrial employees earned less Birr100 (\$50) per month and 85 per cent less than Birr300 (\$150) in 1985/86. Public employees are generally paid slightly more than their counterparts in the private sector though there are wide variations in the average wage and distribution of wage rates between branches. A government Wage Board is the process of reclassifying and regrading public sector jobs to ensure equal remuneration for those undertaking comparable work throughout the public sector.

The government has also sought to reduce income inequality by restricting annual incremental increases to public employees earning less than Birr650. Up to FY1980 these annual wage rises were generalised for all eligible employees. Thereafter they were related to productivity (see Section 4.3). Higher paid managerial and professional staff are excluded from these benefits and are, effectively, subject to a wage freeze. In the mid-1980s a ceiling of Birr2,000 per month was announced for public sector employees. This policy has compressed income differentials in line with the government's social objective.

Table 2.15: Monthly wage of employees by ownership and branch, FY1986
(Birr)

Branch	Average monthly wage			Percent earning			
	Total	Public	Private	<100	101-299	300-799	>800
Food	216	221	164	41.7	43.6	13.3	1.4
Beverages	264	264	271	31.2	48.2	18.3	2.3
Tobacco	121	121	-	32.1	49.0	17.7	1.3
Textiles	194	194	202	39.7	53.4	6.1	.7
Leather & shoes	196	195	212	37.4	47.0	13.4	2.2
Wood & products	399	443	236	15.7	55.0	26.7	2.6
Paper & printing	258	243	351	16.9	59.2	21.6	2.4
Chemicals	395	392	432	22.4	45.0	22.5	10.2
Non-metallic	247	256	183	27.6	55.8	13.9	2.7
Metal products	370	295	650	14.1	55.3	23.6	7.0
Total	234	230	278	34.4	50.5	12.7	2.4

Source: Based on CSA, Results of the Survey of Manufacturing Industries, 1985/86, January 1989

Although the average industrial wage has doubled in the fourteen years since FY1975, wage increases have not kept pace with inflation^{7/} (Table 2.16). Indeed, by FY1985 the average real wage had fallen to 58 per cent of its FY1975 level. It subsequently recovered to 78 per cent of the FY1975 real wage in FY1988 - though the data from 1987 covers only relatively higher paid public sector workers - largely as a result of a fall in the retail price index. The decline in real wages will have been even more marked for managerial staff who did not benefit from annual performance linked pay rises.

To compensate for declining real wages, a number of enterprises have introduced bonus schemes and a range of near-cash fringe benefits for their staff: free or subsidised milk, soft-drinks, food and housing, free transport or transport allowances, and contributory pension funds. In FY1984 bonuses and fringe benefits amounted to 11.9 per cent of the MOI's wage bill, rising to 14.2 per cent in FY1988. Management has also used promotion generously as a means of circumscribing wage controls (only promotions for staff earning more than Birr700 per month are subject to prior MOI approval). In FY1983 83 per cent of staff earning between 350 and 700 Birr received promotions and 16 per cent of staff in managerial grades. Despite these measures, the industrial workforce has suffered from a significant decline in real wages which, inevitably, will have eroded incentives.

7. Real wages have been calculated on the the basis of the average monthly wage of all industrial workers and the Addis Ababa Retail Price Index. The retail price index should be used with caution since it takes no account of subsidised purchases from kebelle shops and other mass organisation outlets. Nor does it include housing costs.

Table 2.16: Average monthly wages and real wage, FY1981 to FY1988

	1975	1980	1982	1984	1985	1986	1987a/	1988a/
Average wage (Birr)	131	187	196	212	229	233	253	289
Wage index	100	143	149	161	174	177	193	220
Price index	100	208	230	251	299	270	264	282
Real wage (Birr)	131	90	85	84	76	86	96	102
Real wage index	100	69	65	64	58	66	73	78

a/ MOI supervised industries only.

Source: Calculated from CSA, Results of the Survey of Manufacturing Industries, various issues; NBE, Quarterly Bulletin, 2.2, 1987; and IMF, Financial Statistics, various issues.

Table 2.17: Women in the industrial workforce, FY1977 to FY1986

	1977	1980	1984	1986
Female workforce	17,586	22,436	30,776	28,282
Women as proportion of total workforce (per cent)	28.0	29.2	34.3	31.3
Average monthly wage (Birr)				
- men	166	186	224	231
- women	98	113	119	149
Women's wage as a proportion of mens	58.7	61.0	53.3	64.6

Source: CSA, Results of the Survey of Manufacturing Industries, selected years.

Female participation in the industrial workforce has been encouraged. By FY1986, 28,282 women were employed in the manufacturing sector, ten thousand more than in FY1977, and women accounted for 31 per cent of the industrial workforce (Table 2.17). Progress had also been made in bringing women out of the traditional office occupations and onto the shop-floor - in FY1986 81 per cent of female industrial employees were production workers and women have entered such male preserves as the metal products branch - and in reducing pay differentials between men and women. In FY1986, however, about 60 per cent of the female workforce was engaged in the textile industry (62 per cent of women employed by the MOI in FY1988), virtually all as low paid seamstresses in the garment assembly plants or on the production lines in textile mills. Furthermore, opportunities for technical and vocational training, and so higher level managerial jobs, are narrower for women than for men. Other constraints on female participation include the absence of sufficient day-care-facilities and inadequate maternity leave. These and other women's issues are dealt with by the Revolutionary Ethiopia Women's Association (REWA), which boasts a membership of five million and is represented in all enterprises.

2.5
and efficiency

Capacity utilization rates, labour productivity

Much of Ethiopia's industrial capacity is obsolete and run-down. A survey undertaken in 1984 revealed that nearly three quarters of the factories in operation at that date had been commissioned at least twenty years before (Table 2.18). Often equipment was already second-hand when it was installed and so the age of much of the plant is older still. The problem of aging machinery is exacerbated by inadequate maintenance procedures (in many cases owing to the failure of owners to hand over plant manuals at the time of nationalisation), the inexperience of repair staff and the difficulties in acquiring spare-parts for equipment that is no longer produced. Spare parts often have to be tailor made at great expense. Furthermore, most of the machinery installed since 1975 has been imported and spare-parts have to be ordered from abroad. Although factories maintain substantial inventories of spare-parts, at great cost, there are still prolonged delays in the delivery of spares from some suppliers. Consequently, equipment down-times are often relatively long.

Table 2.18: Age of machinery in surveyed enterprises, 1984

Age of Machinery (Years)	Number of factories	Percent distribution
2-11	10	8.9
12-18	20	17.9
19-28	37	33.0
older than 29	45	40.2
Total	112	100.0

Source: Gizachew Shiferaw, The choice of development of manufacturing technology in Ethiopia, 1986.

The age of much of the installed capacity means that capacity utilisation rates are often a matter of purely academic interest, particularly as the necessary data on rated capacity is often not available since details of plant were not handed over at the time of nationalisation. Despite these problems, the MOI reports that capacity utilisation rates increased rapidly in the late-1970s when zemecha campaigns brought about rapid growth of industrial output. At this time the financial resources for new investment were limited and much of the increase in production in the period up to 1981/82 was achieved by bringing spare capacity into use. By the early 1980s capacity utilisation rates were given as 80 to 100 per cent. Similar rates are given for the mid-1980s, though the decline in output and deteriorating sales performance in recent years (FY1989 in particular) will have been translated into falling capacity utilisation rates.

In contrast, capacity utilisation rates in the small-scale (private) industry sector are generally very low. A HASIDA survey undertaken in 1980 revealed that only 5 out of 72 enterprises had capacity utilisation rates exceeding 56 per cent and only 27 had rates above 40 per cent. Since then capacity utilisation rates are thought to have fallen even lower. HASIDA now considers the range for the sector to be closer to 10-35 per cent. This reflects both the age of the installed capacity in private sector manufacturing establishments and the supply constraints these enterprises face.

Variations in the level of labour productivity between branches are, as might be expected, closely related to variations in capital intensity (Table 2.0). This is equally true of the disparity between levels of productivity in the public and private sectors.

Data for all medium and large-scale industrial enterprises indicates that labour productivity increased by 27.9 per cent in terms of gross value of production and 18.3 per cent in terms of value added per permanent employee at current market prices (Table 2.0). Fixed price data is not available. However, if these increases are compared with the 20 per cent increase in the Addis Ababa Retail Price Index over the same period, it may be surmised that there was little improvement in productivity in real terms for the sector as a whole. This reflects the high levels of capacity utilisation at the beginning of the period, which provided little room for improvement in labour productivity through the addition of increments of capital stock except through new investment. There has also been a tendency for factories to maintain higher than optimal staffing levels in an effort to mop up urban unemployed. A recent survey of the textile branch - the largest employer - concluded that staffing levels were significantly higher than might

be expected^{8/}. This may explain why productivity (at current prices) declined in the textile branch, despite substantial investment in large capital-intensive textile mills in the early 1980s. Most of the other branches that benefitted from substantial investments in the period 1984 to 1986 - non-metallic mineral products, beverages and chemicals - registered increases in value added productivity that exceeded the rate of retail price inflation. The other exception is the metalworking branch. Although output per employee in the metal products branch more than doubled from 1981/82 to 1985/86, productivity in terms of value added stagnated because much of the increase in output was brought about by the expansion of assembly operations. Improvements in productivity in the wood products branch are related to the closure of old and inefficient mills rather than new investment.

The importance of new investment in bringing about improvements in productivity is substantiated by data for the enterprises supervised by the MOI. Over the period FY1984 to FY1988, immediately following the commissioning of the first generation of new enterprises established since 1975, labour productivity, as measured in terms of gross production value at constant prices (Table 2.0), increased by an average of 18.6 per cent. The Ethiopian Cement Corporation recorded a massive increase of over 400 per cent. This was brought about by the commissioning of the new Mughar Cement Factory. However, other Corporations that benefitted from substantial investments in the form of new plants performed less well. Productivity actually declined in the basic industries - metalworking and chemicals - where the government had hoped to bring about the largest increases in output during the TYPP period. Both these Corporations have been affected by supply constraints owing to their dependence on imported inputs.

8. Werner International Consultants, Final Report on the Establishment of a National Textile Centre, June 1988.

Table 2.19: Productivity of all medium and large-scale manufacturing enterprises in terms of gross production value and value added
(Birr at current market prices)

Branch	per permanent employee		Gross value of production per permanent employee			Value Added		Percent
	1981/82	1985/86	1981/82	1985/86	change	Per cent 1981/82	1985/86 change	
Food	33,992	32,168	-5.4	8,401	7,271	-13.5		
Beverages	40,729	51,046	25.3	7,693	9,870	28.3		
Tobacco	99,786	131,489	31.8	28,841	24,573	-14.8		
Textiles	13,241	12,331	-6.9	4,702	3,116	-33.7		
Leather	25,356	26,005	2.6	4,384	3,837	-12.5		
Wood	12,118	16,241	34.0	5,260	6,461	22.8		
Paper	24,805	24,553	-1.0	7,972	9,966	25.0		
Chemicals	36,669	36,540	-.4	9,453	12,424	31.4		
Non-metallic	16,739	19,586	17.0	3,241	4,317	33.2		
Metal	23,038	55,133	139.3	11,336	11,457	1.1		
Total	25,048	32,024	27.9	6,661	7,887	18.4		
Public	...	32,831	...	5,720a/	8,039	40.5		
Private				20,952	...		3,477a/	5,605 61.2

a/ Data for 1980/81.

Source: CSA, Survey of Manufacturing Industries, various issues.

It is noteworthy that neither the Tobacco and Matches Corporation or the Leather and Shoe Corporation, which achieved significant increases in productivity (50 and 32 per cent respectively), benefitted from large-scale investment in the early 1980s. In the case of the Leather and Shoe Corporation the market improvement in productivity may be explained by improved capacity utilisation rates as the export market expanded and the higher degree of processing achieved in recent years.

Table 2.20: Productivity in MOI supervised corporations, FY1984 to FY1988
(Birr)

MVA _b / Corporation	FY1984		FY1988		GVP _a / FY1984		FY1988		GVP _b / FY1988
Eth. Food	38,845	43,303	46,043		5,866				7,204
Eth. Sugar	18,550	20,306	21,148		7,565				7,023
Eth. Beverages	38,544	30,560	56,531		8,267				8,087
Nat. Tobacco	49,359	76,728	91,934		8,380				23,358
Nat. Textiles	10,443	11,888	15,288		3,342				4,100
Nat. Leather	26,306	32,666	38,427		4,449				9,882
Eth. Printing	19,685	22,500	21,277		9,388				9,422
Nat. Chemical	52,017	48,833	46,279		14,670				12,868
Eth. Cement	10,677	54,502	48,840		2,015				11,010
Nat. Metal Works	41,335	36,708	38,521		7,653				8,417
Share Companies	40,247	39,788	37,581		11,041				9,368
Total	21,611	25,630	23,966		30,392				7,080

a/ At constant 1980/81 prices.

b/ At current market prices.

Source: MOI, Statistical Bulletin, June 1989.

Ultimately, the efficiency of manufacturing activities should be measured in terms of the return on resources allocated. This can be assessed crudely by calculating the cost of resources needed to save or earn a unit of foreign currency - the Domestic Resource Cost (DRC) ratio. A study of this kind was carried out by the World Bank in 1983. Their analysis covered 19 enterprises drawn from all of the MOI supervised Corporations covering 20 per cent of gross production value and 21 per cent of employment at that time. At the current exchange rate, their calculations revealed that 14 enterprises had DRC ratios of greater than one (the domestic resource cost of production is greater than the cost of importing that product). DRC ratios were highest in the case of the case of iron and steel, pulp and paper, glass bottle, beer and textile products. Three of these enterprises had negative international value added, meaning that the balance of payments would benefit if these enterprises were closed because the tradeable cost component of production is greater than the international value of the final product. Only leather processing was shown to be extremely efficient (with a DRC ratio of 0.36), while the Addis Ababa Cement Factory and Wonji Sugar Factory achieved DRC ratios of 0.41 and 0.74 respectively. Other enterprises achieving a DRC ratio of less than unity were the Babile Mineral Water Factory and Ethiopian Footwear. When the exchange rate was devalued by thirty percent the number of enterprises with a DRC of less than unity was found to increase from five to nine.

A more detailed study of the state-owned textile enterprises undertaken in 1987^{9/}, reveals that DRC ratios may vary considerably from plant to plant. Three of the fifteen enterprises studied were shown to have DRC ratios of less than one, while twelve showed varying degrees of inefficiency of which three generated negative value added at international market prices. Consequently, a high DRC ratio for one enterprises should not be interpreted as evidence that Ethiopia does not have a comparative advantage in this branch. Nor should a low DRC ratio be confused with profitability. Even though the domestic resource cost of producing cement at the Addis Ababa factory was less than the cost of importing its products, the factory has consistently made a loss. Its comparative advantage arises from the natural protection afforded by high transport costs per unit value as much the internal efficiency of its operations. Furthermore, the DRC calculation may take no account of social benefits - security and employment for instance - that accrue even if an operation is inefficient when compared with world market prices.

9. Gezahgne Mitikie, Measuring Economic Efficiency. A Study of the State Owned Textile Industry in Ethiopia, MSc. Thesis, Addis Ababa University, 1987.

Notwithstanding its methodological limitations, the DRC is a useful tool in pointing out inefficiencies in the allocation of resources. These inefficiencies are compounded where the degree of protection afforded as measured in terms of their Effective Protection Coefficient does not correspond to their efficiency as measured by their DRC ratio (see Section 4.3). Three of the enterprises with DRC ratios of less than one suffered from policy disincentives in the form of EPC ratios of less than one, while ten of the enterprises with DRC of greater than one enjoyed incentives from the combined effect of pricing and tariff policies. Consequently, the World Bank study demonstrates that inefficient enterprises are sustained by the high level of protection afforded by tariff and non-tariff barriers to imports.

Clearly the introduction of a unified tariff structure would, in the long term, increase the efficiency of the industrial sector, though only at the short-term cost of the closure of the most inefficient enterprises. However, the picture is not entirely bleak for those enterprises that currently run inefficiently. There is room for reducing the Domestic Resource Cost of the least efficient enterprises, indeed for the sector as a whole, by increasing capacity utilisation rates and adjustment of the exchange rate. A recent World Bank study^{10/} has carried out a sensitivity analysis on the basis of 36 IPEs, most of which are export oriented, which indicates that full capacity utilisation throughout the sample would reduce the long-run DRC from 0.82 to 0.66. A 100 per cent devaluation of the Birr would reduce the DRC from 0.82 to 0.57. Consequently, the prospects for Ethiopian manufacturing are closely linked to the implementation of suitable reforms. The most important of these are the devaluation of the Birr and the provision of adequate foreign exchange, thereby eliminating one of the most crippling constraints on industrial performance, the shortage of imported inputs and spare-parts. Moreover, the government's decision to open the industrial sector to market forces is likely to improve efficiency. Although, efficiency in terms of Domestic Resource Cost and profitability are not synonymous, as indicated above, they are closely linked. Competition between enterprises, and between domestic manufactures and imports, will stimulate changes in product lines and manufacturing methods which will reduce costs and increase margins.

10. Ethiopia: strategies and Policies for Improved Performance, Industrial Sector Review, World Bank, Report No. 7831-ET.

2.5 Financial performance^{11/}

In marked contrast to the performance of IPEs in the rest of Africa, the Corporations supervised by the Ministry of Industry have, for the most part, been profitable. Total pre-tax profits in the Corporations' consolidated accounts have increased from Birr49.7 million in FY1978 to Birr176.8 million in FY1987^{12/}. These profits have been sustained by controlled prices and a high degree of protection. Consequently, profitability, in the Ethiopian context, should not be equated with economic efficiency. Indeed, the World Bank analysis of Domestic Resource Cost ratios referred to above indicates that ten out of the nineteen enterprises examined were financially profitable but relatively inefficient, whereas only four of the profitable enterprises were classified as relatively efficient. On the other hand, two of the unprofitable enterprises were classified as relatively efficient.

From FY1978 to FY1984, total Corporate pre-tax profits increased at the phenomenal average annual rate of 22.2 per cent. Only the Ethiopian Cement Corporation consistently registered losses (Table 2.21). Increases in total profits were achieved through rapid sales growth - total net sales income increased at an average annual rate of 16.8 per cent from FY1978 to FY1984 - and widening of the profit margin from an average of 7 per cent in FY1978 to 10 per in FY1984 (see Tables A-8 and A-9). Profit margins varied considerably between enterprises: they were highest in the printing industry, around 30 per cent, and lowest in the case of the Ethiopian Food Corporation, around 6 per cent. These variations reflected the government's social priorities. The factory-gate price of essential commodities, such as foodstuffs and textiles, was purposefully kept low in order to protect consumers while producers of non-essential commodities were allowed larger margins.

11. This section deals with Industrial Public Enterprises supervised by the Ministry of Industry only. No details on the financial performance of private sector or other public sector industrial enterprises.

12. This analysis is based on the Profit and Loss Accounts and Balance Sheets of the Corporations supervised by the Ministry of Industry. Before 1979, taxation and government transfers were appropriated at Corporate level on the basis of their consolidated accounts. Under the terms of Proclamation 163/79, however, the Corporation ceased to function as a fiscal unit. All taxation and central government transfers are now appropriated at the plant level. This diminishes the value of analysis based on consolidated accounts at a Corporation level. It also has important implications for financial management.

Although the overall picture was one of rising profitability in the period up to 1984, consolidated Corporate accounts disguise the variations in performance between plants some of which had consistently made losses. As of June 1985, twenty-six plants - out of a total of over 150 under MOI supervision - had negative capitals, either from the date of the Proclamation or as a result of accumulated losses. Another ten plants had large accumulated deficits as a result of consistent operating losses. Total operating losses before taxation had increased from Birr14.6 million in FY1980 to Birr26 million in FY1984 and rose as a proportion of total profits from 7 per cent to 15.5 per cent. Clearly, there was an underlying trend for the financial position of loss-making enterprises to deteriorate^{13/}.

After FY1984 the IPEs' financial performance deteriorated across the board. Total pre-tax profits levelled off at around Birr170 million in FY1986 and FY1987 and then dropped to Birr77.4 million in FY1989: far below their level in FY1978 in real terms. The deterioration in financial performance was seen all but two of the Corporations. After a decade of steady losses the Cement Corporation managed to make a small profit in FY1988 and FY1989 and, thanks to strong export sales, the Leather and Shoe Corporation registered a steady growth in profits up to FY1988, though its profits also fell in FY1989.

Exogenous factors played a major part in reducing Corporate profits. Total net-sales income stagnated at around Birr2,000 million from FY1987 to FY1989. While Cement Corporation sales nearly tripled over this period and Leather Corporation sales continued to rise at a steady rate, net-sale income in the Share Companies and Metalwork Corporation dropped by 48 and 37 per cent respectively. This was partly due to a reduction in output as a result of supply constraints. These enterprises depend heavily on imported inputs and so they have been severely affected by real cuts in the foreign exchange allocation. The slow-down in economic activity and gradually erosion of per capita incomes have also played a part in reducing demand for some products. Increases of sales of essential commodities - foodstuffs and textiles - have, for instance, slowed down to a lower rate than the growth in population.

13. Siviter, D. H., Financial Management and Information Systems in Public Industrial Plants in Ethiopia, Paper submitted to the First National Symposium on Industrial Development in Ethiopia, June 1986.

Table 2.21: Corporation net income before tax, selected years
(Million Birr)

	1984	1986	1987	1988	1989	Corporation	1978	1982
Eth. Food		1.8	16.2	17.3	30.6	22.1	9.9	9.7
Eth. Sugar		5.5	18.7	24.3	16.5	14.6	11.2	19.5
Eth. Beverage		21.3	14.4	31.4	32.2	21.6	14.0	8.4
Nat. Tobacco		12.7	25.2	19.5	24.0	31.6	35.8	23.4
Nat. Textiles		3.1	24.4	13.2	14.5	14.0	-1.7	-27.1
Nat. Leather		-1.0	.3	9.3	8.6	24.1	38.5	24.6
Eth. Printing		3.6	10.5	15.2	18.1	20.1	17.7	14.6
Nat. Chemical		1.1	13.3	20.9	12.8	22.2	18.5	5.9
Eth. Cement		-2.7	-6.2	-3.9	-2.9	-2.0	2.3	2.4
Nat. Metalwork		7.9	15.3	29.0	17.9	15.1	15.0	3.1
Share companies		3.4	2.9	7.2	18.5	8.2	8.7	1.0
MOI		49.7	125.8	169.2	165.4	176.8	153.9	77.4

Source: Based on the Balance Sheets and Profit and Loss accounts of the MOI supervised Corporations provided by the MOI.

As sales stagnated inventories increased from a total of Birr757 million in FY1986 to Birr897 million in FY1989 (see Table A-11). Although the ratio of inventory to gross sales income (turnover) has fallen from over 50 per cent in FY1978 to 42 per cent in FY1989, the ratio has deteriorated in the case of those Corporations worst affected by the slow-down in sales: the ratio rose from 54 per cent in FY1986 to 106 per cent in FY1989 in the case of the Metalwork Corporation and the ratio also doubled for the Share Companies reaching 64 per cent.

Reductions in cash flow also had a follow on effect as distributors and retail outlets delayed the settlement of their accounts. Accounts receivable rose by over 50 per cent from Birr408 million in FY1984 to Birr645 million in FY1989 and in that year represented 27 per cent of the Corporations' consolidated assets (as much as 41 per cent in the case of the Food Corporation) as compared with 18 per cent in FY1978 (see Table A-10). This has been a major drain on enterprise liquidity.

Rising material costs coupled with tight controls on factory-gate price rises have also contributed to a reduction in profit margins across the board. By FY1989 the average profit margin on sales was only 4 per cent, lower than in FY1978, and five of the eleven Corporations were making margins of less than five percent as compared with two Corporations five years before.

The deteriorating Corporate financial position is reflected in other financial indicators. Returns on total net-fixed assets rose from 19 per cent in FY1978 to 41 per cent in FY1984 (see Table A-12). In that year, four of the Corporations registered profits which exceeded the book value of fixed assets while only the Cement, Textiles and Sugar Corporations had a rate of return of less than 25 per cent. These exceedingly high rates of return were possible, in large part, because much of the plant had been fully or almost fully depreciated. As new factories were inaugurated after 1984, the rate of return on book value fixed assets inevitably fell though this trend was amplified by falling profit margins and the stagnation of sales. By FY1989, the return on total fixed assets had fallen to 12 per cent and six of the Corporations were registering returns of less than 25 per cent. Of these the Cement and Textile Corporations, both of which had benefitted from substantial investment in the previous five years, were in the weakest position. The Cement Corporation's profits were well below an acceptable return on investment at 2 per cent while the Textile Corporation registered a loss. As a result of low levels of investment the Printing and Tobacco Corporations continued to register returns that exceeded the book value of fixed assets, though these were much reduced. Owing to the Corporations' low equity base the rate of return on net-worth has deteriorated to an even greater extent than the return of net-fixed assets (see Table A-13).

Despite the rapid increase in pre-tax profits in the period up to FY1984, the Corporations' financial position has always been weak owing to substantial transfers of funds to central government. The government has drawn on Corporation profits by applying a capital charge of 5 per cent of pre-tax income, which represents the return on government equity^{6/}, and corporate tax at a rate of 50 per cent. Both the capital charge and income tax are levied at the plant level. Consequently, Corporations are unable to offset the losses of one enterprise against the profits of another and Corporations that have registered a loss overall have had to pay some Corporate tax. Those enterprises that have made profits after tax must surrender 90 per cent of these profits - termed the residual surplus - to the Ministry of Finances within six months. The remaining 10 per cent of residual surplus - equivalent to 5 per cent of pre-tax income, excluding capital charge payments - may be added to the Corporation's general reserves (see below). However, when these general reserves reach 30 per cent of the government's equity holding all net-income after tax must be surrendered to the Ministry of Finances. Consequently, net-income after tax amounts to just 5 per cent of pre-tax net income.

Since 1980, transfers in the form of Corporation tax and capital charge have averaged at least 55 per cent of Corporate pre-tax income, though in FY1988 and FY1989 the average rose to 66 and 99 per cent respectively (see Table A-14). In FY1989, the total net-income of the Corporations after tax amounted to less than Birr1 million, three Corporations registered losses and two others barely broke even (see Table A-15). In contrast, only one Corporation registered losses before tax in that year. Details of central government appropriations in the form of residual surplus transfers are not included in the Corporations' balance sheets or profit and loss accounts. However, data provided by the Ministry of Industry reveals that these transfers totalled Birr79.3 million in FY1988, which represents 50.9 per cent of pre-tax net-income and 133 per cent of net-income after tax. Those Corporations faced with a loss after the deduction of central government appropriations have had to finance their operating expenditure by borrowing or from general reserves.

6. There is some confusion as to the valuation of the initial State Capital on the basis of Article 5 of Proclamation 1632/79. The NOI recognises the State Capital as amounting to value of share capital, reserves and accumulated profits (net assets) on July 1, 1977. The Ministry of Finances, on the other hand, regards the State Capital as equivalent to the paid-up capital before nationalisation. This method of assessment would tend increase the volume of transfers to the Treasury. Enterprises under MOI supervision have followed the MOI procedures for calculation of the State Capital.

Table 2.22: Corporate general reserves, selected years
(Birr million)

	1978	1982	1984	1986	1987	1988	1989
Eth. Food	8.8	6.6	.5	12.3	8.8	-.4	-8.5
Eth. Sugar	59.4	5.8	8.0	9.3	9.5	9.7	10.7
Eth. Beverage	15.3	-5.4	-3.6	2.3	-4.1	-12.7	-35.6
Nat. Tobacco	33.2	4.6	6.7	9.0	10.5	11.7	12.4
Nat. Textiles	40.8	-26.4	-29.8	-54.6	-78.5	-110.7	-149.9
Nat. Leather	-9.9	-36.7	-42.7	-39.4	-35.5	-25.7	-24.8
Eth. Printing	1.9	2.6	1.9	2.1	2.2	2.2	2.2
Nat. Chemical	-.3	-2.9	-3.8	-2.0	-1.5	-.6	-1.2
Eth. Cement	-8.7	-20.6	-27.0	-18.5	-36.3	-80.2	-74.0
Nat. Metalworks	3.0	1.3	.9	.4	-.3	-3.2	-10.6
Share companies	1.5	2.5	2.0	3.1	3.3	3.6	3.5
MOI Total	143.5	-71.0	-88.6	-79.1	-127.3	-209.9	-279.5

Source: Based on the Balance Sheets and Profit and Loss accounts of the MOI supervised Corporations provided by the MOI.

Article 6 of Proclamation 163/79, permits each public enterprise to establish a "reserve fund"^{1/}. This may be used increase working capital; for the amortisation of debt, subject to Ministerial approval; for the improved utilisation of existing capacity; and to cover losses. Owing to the extremely low level of transfers to general reserves permitted for profitable enterprises, withdrawals to cover loss making enterprises have usually exceeded transfers from profitable enterprises to general reserves. From FY1978 to FY1989 the total value of reserves held by the Corporations fell from Birr143.5 million to negative Birr279.5 million (Table 2.22). This represents cumulative net-losses after transfers to central government of Birr423 million over the eleven year period. While all but three of the Corporations had a positive general reserve position in FY1978 this had reversed by FY1989 when only three of the Corporations had a positive balance.

The low level of transfers to general reserves by profitable enterprises and the deteriorating overall general reserve position has meant that the Corporations have been unable to take a leading role in the financing of their own investment programmes. Whereas the Corporations financed 52 per cent of their investment in FY1981, through transfers from subsidiary plants, they financed just 5 per cent of their investment from their own funds in the period FY1984 to FY1988: the balance was made up by government contributions (34.1 per cent) and bank loans (57.8).

Transfers from the central government to finance investment projects have, on the whole, offset the decline in general reserves, though both the National Leather and Shoe and Cement Corporations have temporarily suffered negative capital positions. Total equity increased from Birr474.0 million in FY1978 to Birr724.5 million in FY1989 while the total value of government equity increased from Birr331 million to Birr874.1 million over this period. Nevertheless, long-term borrowing increased at a faster rate and the overall long-term debt-equity ratio from rose from 16 per cent in FY1978 to a peak of 50 per cent in FY1987 and then fell slightly in FY1988 and FY1989 (see Table A-16). The degree of dependence on long-term borrowing to finance new investment has varied considerably between Corporations. The Tobacco Corporation has been able to finance all of its investment out of capital and the Sugar and Chemical Corporations together with the share companies have managed to keep their long-term debt-equity ratios relatively low. In the case of the Metal Works and

7. The "reserve fund" was originally conceived as a specific cash fund. However, the accounting procedures followed by IPEs do not allow for the establishment of discrete identifiable funds and so the profits retained by enterprises (transferred to general reserves) are usually represented by an increase in working capital.

Textiles Corporations, on the other hand, long-term debts exceeded capital in FY1989.

Low net-incomes after tax have also affected the Corporations' liquidity. The total value of cash on hand at the bank held by the Corporations peaked at Birr190 million in FY1980. It dropped to around Birr100 million during the early 1980s and then fell to Birr63 million in FY1989, less than the value held in FY1978. As a result enterprises have been forced to borrow to finance operational costs. In FY1980 the value of short-term loans were equivalent to about 52 per cent of the Corporations' cash on hand; by FY1989 the Corporations' short-term was 4.5 times that value of their cash on hand.

The Commercial Bank of Ethiopia provides credit for those enterprises in financial difficulties in the form of term loans or overdraft facilities. Overdraft facilities should be repaid in a single instalment at the end of the year. However, they are usually renewed automatically and, in practice, both the banks and the enterprises regard overdrafts as credits which need not be serviced. As a result the Corporations' consolidated short-term debt more than doubled from Birr87.1 million in FY1978 to Birr188.1 million in FY1989 (see Table A-17) and short-term credit has assumed a key role in the financing of public enterprises. Although the proportion of short term loans in the Corporations' consolidated total liabilities has dropped from 10 per cent in FY1978 to 8 per cent in FY1989 and the proportion of short-term loans in total Corporation borrowing has fallen from 50.6 per cent in FY1978 to 23.4 per cent in FY1989, short-term borrowing has always been quantitatively more important than long-term borrowing from domestic banks.

As the Corporations' liquidity position has tightened in recent years, retained income has been insufficient to cover repayments and slippage on long-term debt servicing has also increased. This is particularly true of the bank financed investments of the early and mid-1980s which had high gearing rates and are now suffering from low profit levels. By FY1989 accumulated arrears on interest and principal owed to the Agricultural and Industrial Bank (AIDB) amounted to Birr88 million on an outstanding principal of Birr167 million. The poor performance of loans to the public sector has meant that the Corporations have passed on their cash-flow difficulties to the banking system and weakened its financial position. In order to address this problem the MOI issued a directive in 1985 that loan repayments should be charged against general reserve or, if the general reserve was insufficient, against pre-tax profit by crediting a new Loan Redemption Fund. This fund amounted to Birr130 million in FY1989. However, there is still no indication that the outstanding debts can or will be redeemed.

Inventories have always relatively high, owing to the shortcomings of the distribution and marketing system, and this has exacerbated the enterprises' liquidity constraints. Unfortunately raw materials and finished goods cannot be distinguished in the data available. However, a recent study has shown that the raw material turnover ratio (the stock of raw materials and other inputs over the cost of direct and indirect inputs) for the Corporations as a whole amounted to 216 days in 1984, varying from 48 days in the case of the Food Corporation to 563 days in the case of the Cement Corporation. Eight of the Corporations maintained raw material stocks sufficient to cover more than four months of production and four had sufficient stocks to maintain operations for more than a year. Though enterprises' may have to maintain relatively large inventories as a buffer against delays in delivery, there can be little justification for inventories of more than six months. This indicates poor stock management and a failure to coordinate production operations. The finished goods-turnover ratio (the stock of finished goods divided by the cost of goods sold) has been significantly lower, averaging 57 days in 1984, and ranging from 7 days in the case of the Printing Corporation to 124 days for the Textile Corporation. Four of the Corporations held stocks of finished goods in excess of 100 days. In normal circumstances enterprises can be expected to hold finished goods inventories equivalent to no more than a month of production. The poor performance of Ethiopian industries on this count reflects poor coordination between the distribution agencies and producer, the inadequate distribution infrastructure which results in delays and the production of unpopular items which retailers are reluctant to purchase.

Despite large inventories, most of the corporations have an unfavourable current ratio (current assets:current liabilities). Ideally, the current ratio should be around 1.5 but it has fallen from 1.79 in FY1978 to 1.28 in FY1989 and reached a low of 1.16 in FY1984 (see Table A-18). The situation varies from Corporation to Corporation, the ratio being least favourable in the Textiles, Food and Chemicals Corporations owing to their large short-term debt burden. If the acid test ratio (debtors and cash on hand: current liabilities) is calculated the situation is shown to be even more precarious. The ratio should be around 1:1, but the overall value for the enterprises under MOI supervision was 0.44 in 1989. The ratio of total debt (long and short-term) to equity is also unfavourable. Given the Corporations' considerable dependence on short-term financing a debt:equity ratio of 1.2:1 would be most suitable. Since the early 1980s, however, the ratio has consistently been above 2:1 and there has been no significant improvement over this period (see Table A-19).

There can be no doubt that the massive transfers from the Corporations to the central government over the past decade have adversely effected the operating efficiency of the IPEs as well as rendering their financial position unstable. Retention of a larger

proportion of residual surplus would enable enterprises to finance their working capital out of operational profits, build up reserves for future investment and reduce dependence on a severely strained banking system. Operational losses and expenditure on interest charges could be reduced by the consolidation of accounts at the Corporation level for taxation purposes, thereby allowing transfers between enterprises. Proclamation 163/79 already has provision for the elimination of accumulated losses through budgetary grants several of which have been awarded to the most seriously indebted enterprises in the past. However, those plants with substantial accumulated losses could be assisted without transfers from the government budget by allowing them to credit their after-tax earnings to reserves before tax. Since the retention of a large proportion of earnings would distribute resources to the most profitable enterprises, this measure should be accompanied by a restructuring of the tariff system to ensure that profitability corresponds with efficiency. In the long term, unprofitable and inefficient enterprises should be closed.

2.6 Imports and exports of manufactures

Import dependence, measured as the per cent ratio of total imports to total domestic supply, has increased from 13 per cent in FY1975 to 18.5 per cent in FY1986 (Table 2.23). This may be explained, to a large extent, by the agricultural sector's failure to meet the growing demand for food which has necessitated massive food imports (rising from Birr75.6 million in FY1980 to Birr607.4 million in FY1986). In contrast, while the value of imported industrial products has increased at a rate of 7 per cent per year over the FY1975 to FY1986 period, this increase has been outstripped by an 11 per cent growth rate for domestic industrial output (at current prices). As a result, overall import dependence for industrial goods has fallen from 38.7 per cent in FY1975 to 30.1 per cent in FY1986; a trend that has been accompanied by a fall in the proportion of industrial goods in total imports from 67.3 per cent in FY1975 to 56.9 per cent in FY1986 (see Table A-1).

This may be attributed, in part, to the success of the government's strategy of import substitution through the development of industries satisfying basic needs and domestic consumer demand. However, in the context of foreign exchange shortages and strict control of imports, measures to curtail imports of non-essential industrial goods have also had an impact on the relative decline of industrial imports in the total import bill. Thus, a significant fall in the level of import dependence for industrial goods may be seen in drought years (such as FY1985) when foreign exchange resources are diverted from imports of manufactured goods to food and other essentials. Consequently, part of the substitution effect may have been achieved by failing to meet the demand for imported goods. Rationing, queues at shops and scarcity rents for both domestic imported and domestic manufactures testify to the fact that a large proportion of the domestic demand for manufactures is not satisfied.

A breakdown of industrial imports by end use suggests that the import substitution effect has been strongest in the case of final goods. However, the proportion of intermediate goods in total imports has fallen from 13.6 per cent to 11.7 per cent over the FY1980 to FY1988 period and intermediate goods have also declined as a proportion of domestic industrial supply. Data on the structure of industrial inputs (including raw materials and covering imports for use in manufacturing: see Section 2.0) confirm that dependence on imported intermediate goods and raw materials has declined over this period.

Meanwhile, dependence on imported capital goods has increased. In the absence of a domestic engineering capability, Ethiopia has to import virtually all of its machinery and equipment and most of its spare parts. As the government implemented its TYPP, imports of capital goods increased from Birr440 million in FY1981 to Birr730

million in FY1986 (see Table A-1). Over this period capital goods accounted for 38.6 per cent of total imports - a larger proportion than consumer goods.

Although the economy's dependence on imported capital goods suggests a path for future import substitution, the development of this sector must be a long-term objective. At present Ethiopia lacks the basic engineering industry - a shortcoming the Akaki Spare Parts Factory, opened in 1988, seeks to address - and the technical skills necessary for such projects. Consequently, the priority

Table 2.23: Imports and domestic supply, FY1975 to FY1986
(Million Birr)

	1975	1981	1983	1985	1986	1987
Imports	847	1,384	1,753	1,770	2,201	2,237
GDP	5,689	8,097	9,083	8,902	9,708	9,938
Domestic supply	6,536	9,481	10,836	10,672	11,909	12,175
Imports as per cent of domestic supply	13.0	14.6	16.2	16.6	18.5	18.4
Industrial imports	570	938	1,129	1,035	1,291	1,612
- final goods	115	240	264	243	262	329
- intermediate goods	...	246	289	277	287	326
- capital goods	...	453	577	515	742	958
Gross value of productions/a/	903	2,400	2,632	2,848	2,909	3,200b/
Domestic industrial supply	1,473	3,339	3,761	3,882	4,201	4,812
Industrial imports as per cent of total supply	38.7	28.1	30.0	26.6	30.7	33.5
Imported final goods	7.8	7.2	7.0	6.2	6.2	6.8
Intermediate goods	-	7.4	7.7	7.1	6.8	6.8
Capital goods	-	13.6	15.3	13.3	17.7	19.9

a/ Enterprises employing more than ten persons.

b/ Estimate.

Source: Based on Table A-1 and CSA, Results of the Survey of Manufacturing Industries, various issues.

areas for import substitution will continue to be in the production of consumer and intermediate goods, particularly such industries as offer opportunities for domestic resource utilisation and so will have the greatest import substitution effect.

Import substitution has been fostered by a protective trade environment. The principle control on imports is the import licence, by which the government restricts imports of goods similar to those manufactured in Ethiopia. In addition, imported goods carry substantial duty charges, though these vary considerably from product to product. A survey of the structure of protection undertaken by the World Bank in 1983^{8/}, indicated that the Nominal Protection Coefficient (NPC) ranged from 2.2 (120 per cent protection of output) to 0.47 (53 per cent negative protection); with a weighted average of 1.11 for the 19 enterprises surveyed. Disparities were even broader - ranging from 0.03 to negative 9.89 (indicating negative value added at world market prices) around an average of 1.36 - when the Effective Protection Coefficient (EPC) was calculated. A more recent study of the textile industry, undertaken in 1987, shows that these disparities may be just as wide within a branch. Although the NPC was calculated as 2.08 for all 15 textile enterprises studied, the EPC ranged from 0.15 to negative 15.4.

Such wide disparities in the degree of protection afforded to each enterprise effectively redistribute resources within the industrial sector by enabling protected firms to charge higher than world market prices and taxing firms with negative protection (where they sell at below world market prices in the domestic market and/or pay higher than world market prices for their inputs). This may result in a less than optimum use of resources where, as both the World Bank and textile sector surveys demonstrate is the case in Ethiopia, the protectionist policies have been used to shield inefficient firms (as measured in terms of their Domestic Resource Cost: see Section 2.4). While the protection of inefficient firms may be justified in the short-term on the infant industries argument, the World Bank study argues that the efficiency of some of the protected branches of manufacturing had not improved over a ten year period. Thus, the structure of protection has not promoted industrial development on the lines of potential comparative advantage and has resulted in a substantial opportunity cost. Under these circumstances, reform of the structure of protection could increase economic benefits (see Section 4.3).

In recent years, priority has been given to the promotion of manufactured exports as the government has sought to diversify

8. World Bank, Ethiopia Industrial Sector Review, Report No 5301-ET, December 16, 1985, pages 55-61.

exports away from coffee and boost total foreign exchange earnings. Such is the importance attached to increasing manufactured exports that the government has been prepared to subsidise the losses of enterprises exporting at less than cost price at the official exchange rate. In addition, exporting enterprises have benefited from preferential access to raw materials, foreign exchange and credit (see Section 4.3). This policy has proved successful. The value of manufactured exports increased steadily from Birr83.7 million in FY1980 to Birr157.3 million in FY1987 and their share in total exports increased from 8.8 per cent to 19.8 per cent over the same period (Table 2.0). Moreover, the rate of increase appears to be accelerating. In FY1988 exports of goods manufactured by MOI supervised enterprises alone amounted to Birr172.8 million, double the level two years before.

Despite the growth in total export value, the range of manufactured exports remains extremely narrow (Tables 2.24). In 1988, 72 per cent of the exports of MOI supervised industries were generated by the leather and leather products branch, mostly processed hides and skins; 19.5 per cent by food processing industries, mostly sugar and molasses; and 7.5 per cent by the

Table 2.24: Structure of manufactured exports, FY1980 and FY1988
(Million Birr)

Branch	1980	1984	1986	1987	1988	Percent share 1988
Food	21.5	31.3	32.1	33.5	33.7	19.5
Beverages	-	0.6	0.2	0.5	0.9	0.5
Textiles	-	2.9	4.7	6.0	12.9	7.5
Leather & products	53.6	62.5	51.3	98.6	124.4	72.0
Chemicals	0.9	-	-	0.2	1.0	0.6
MOI supervised enterprises subtotal	76.0	97.3	88.3	138.9	172.8	100.0
SSIs and other IPEa/	7.7	12.9	30.6	18.4	...	
Total	83.7	110.2	118.9	157.3	...	
Manufactures as per cent of total exports	8.8	11.9	12.9	19.8	...	

a/ Excluding the oil refinery.

Source: MOI, Statistical Bulletin, VI, June 1989; and CAS, Results of the Survey of Manufacturing Industries, various issues.

textiles branch, principally knitwear and ready made garments. The contribution of other branches was negligible or nil. For the period FY1985 to FY1989, the MOI lists only 34 export products and only 18 of these were exported regularly (5 food products, 3 beverage products, 7 types of processed skins and hides, 1 leather product, 1 textile product and salt). These 18 products accounted for over 90 per cent of total export earnings. The range of products exported by industries outside MOI supervision is equally limited: animal feedstuffs, fruit canning and packaged meat by enterprises under Ministry of State Farms and some hides and skins, leather and textile products by a small number of private sector enterprises.

Furthermore, 88.4 per cent of the manufactured exports of MOI supervised industries in the period FY1985 to FY1989 may be classified as primary products or intermediate goods which would undergo further processing in the destination country (Table 2.24). Such products are characterised by low value added, low margins and volatile prices. Sugar prices have, for instance, slumped in the 1980s and the unit price of exported hides and skins was 23 per cent lower in FY1986 than it was in FY1980. In order to maximise foreign exchange earnings priority should be given to extending the range and quantity of export products with a high degree of processing.

Table 2.25: Value of manufactured exports by product category, FY1985 to FY1994
(Thousand Birr)

Product	1985	1987	1988	1989	1994	Percent share	
						Average 1985-89	1994
Oil cake and lint	1.4	3.6	2.8	1.5	2.1	2.1	0.6
Pepper extracts	3.5	6.2	10.5	7.4	8.3	5.0	2.6
Sugar and Molasses	22.9	23.2	20.3	13.8	17.1	15.0	5.3
Alcoholic beverages & mineral water	1.5	0.5	1.0	0.8	5.5	0.6	1.7
Semi-processed skins & hides	57.1	96.5	121.0	93.1	153.4	65.6	47.8
Finished leather & leather articles	0.0	1.6	3.5	2.9	42.9	1.4	13.4
Textile products	1.7	6.5	14.2	24.4	79.5	7.8	24.8
Washed and bagged salt	0.8	0.7	1.0	1.1	10.0	0.7	3.1
Tools & pumps					1.2	-	0.4
Others	0.6	0.0	11.1	0.8	0.8	1.9	0.2
Total	89.5	138.8	185.3	145.8	320.8	100.0	100.0

Source: Data provided by the MOI.

Some progress has already been made in increasing exports of finished products and the MOI anticipates that this trend will continue under the FYP (FY1990-FY94). This foresees both an increase in the value of exports across the board and the share of finished products in manufactured exports rising from 20 per cent to 40 per cent over the plan period (Table 2.25). However, the range of exports will still be extremely limited. Almost half the finished goods exported will be textiles - garments, knitwear and fabrics - and a third will be leather products. Ethiopia is thought to have a comparative advantage in these sectors and the foundations for increased production and export sales have already been laid.

Less attention has been given to identifying new export products. This could be done by the promotion of manufactures already produced in Ethiopia or new products that might be manufactured specifically for export markets. Only three new export products are identified in the FYP: hand tools, pumps and grain milling machines. All three are the products of new projects whose primary markets are domestic. A number of enterprises have tried to penetrate export markets with existing products. Over the past five years shipments of mineral water, cigarettes, canvas shoes, leather upholstery and leather uppers have been exported. Unfortunately, none of these have developed into regular sales. To some extent, these failures reflect the limited capability for export promotion, marketing and product presentation in Ethiopia.

Ethiopian industry, developing along the lines of import substitution, has become inward looking. Over the period FY1984 to FY1988 less than 6 per cent of total production was exported (Table 2.26). Only the leather processing and leather products branch, which exported nearly half of gross production, can be described as export oriented. In the remainder of the industrial sector the proportion of production exported, though rising, is still minimal. As a result, managers have little experience of export procedures, marketing strategies and the design of products to meet international standards and consumer preferences. This inexperience is, perhaps, the greatest hurdle Ethiopian industry faces in its attempts to penetrate export markets. Joint ventures with experienced foreign investors may, therefore, provide an opportunity for the most rapid pace of export expansion.

Table 2.26: Proportion of total production exported by branch/, FY1984-FY1988
(Percent)

Branch	1984	1985	1986	1987	1988	Average 1984-88
Food	6.3	6.6	7.0	7.0	7.1	6.8
Beverages	0.2	0.4	0.1	0.1	0.2	0.2
Textiles	0.7	0.6	1.1	1.2	2.5	1.3
Leather & shoes	49.9	43.4	35.7	57.1	56.8	49.7
Chemicals	-	-	-	0.1	0.5	0.1
Others	-	-	-	-	-	-
Total	5.1	4.7	4.4	6.2	7.4	5.7

a/ MOI supervised enterprises only.

Source: Based on MOI, Statistical Abstract, VI, June 1989.

To date, most Ethiopian manufactures have been exported to Europe (by far the most important trading partner) and the centrally planned economies. Ethiopia's trading relationship with Europe appears to be secure, because of its status as an LDC, its long-standing ties with Italy and its strategic role as an exporter of processed leather which provides feedstock for Europe's leather industry. However, there is mounting concern in many circles that the establishment of a single European market in 1992 will have a detrimental effect on exports of manufactures from developing countries. The signing of the Lome IV agreement in December 1989 will allay some of these fears. Of particular importance to Ethiopia, in its efforts to promote export oriented assembly operations through the establishment of an EPZ, is the relaxation of the rules of origin for duty free import into the European Community, reducing the proportion of local value added from 60 per cent to 45 per cent. It is more difficult to judge the effect of closer economic ties between Western and Europe. Certainly, competition will intensify in Ethiopia's established export markets and the importance of competitive pricing and quality control will increase.

2.7 Domestic resource utilisation, import dependence and linkages

Since 1975, the priority accorded to industries satisfying basic needs and meeting demand for consumer products has directed industrial development along a path of import substitution. Within the food processing, beverages and textiles branches this strategy has been compatible with the development of industries based on domestic agricultural resources. By FY1988, 77 MOI supervised public enterprises, all of which fell within these three sectors, drew the majority of their raw materials from domestic agriculture and these enterprises generated nearly half of the MVA (Table 2.0). Likewise, leather processing, in responding to domestic consumer demand and an export market, has been able to draw on Ethiopia's substantial livestock resources. In contrast, only 17 enterprises take the majority of their inputs from domestic forest and mineral resources and they contributed only 5.4 per cent of value added. The remaining 59 enterprises, contributing one third of value added, are dependent on imports for the majority of their inputs. Such import dependent enterprises predominate in the tobacco branch (where they contribute 100 per cent of branch MVA), metals (97 per cent), paper and printing (93 per cent) and chemicals (85 per cent).

Table 2.27: Industrial public enterprises by source of inputs, FY1988

Source	Enterprises		Value added	
	No.	Percent	Birr Mn	Percent
Agriculture	77	46.7	269.3	49.2
Livestock	12	7.3	54.1	9.9
Forest resources	5	3.0	3.8	0.7
Mineral resources	12	7.3	25.5	4.7
Imports	59	35.8	194.2	35.5
Total	165	100.0	547.0	100.0

Source: MOI, Statistical Bulletin, VI, June 1989.

If the proportion of imported inputs in total input consumption is examined, the degree of import dependence is shown to be even greater. According to a FY1986 Central Statistical Authority survey of 206 public industrial enterprises and 196 private enterprises, nearly 40 per cent of all the material inputs consumed by the industrial sector were imported (Table 2.27). The proportion has fallen by 16.2 per cent since a comparable survey was undertaken in FY1978 but the downward trend is slow and may reflect import constraints as well as improved domestic linkage.

This high degree of import dependence is seen throughout the industrial sector. Imports account for less than 20 per cent of total inputs in only two branches, the food and leather processing industries. In all other branches more than 30 per cent of raw materials are imported and the proportion is above 50 per cent in the case of the tobacco, paper and printing, chemicals, non-metallic minerals and metals and engineering industries.

Table 2.28: Ratio of imports to total raw material cost by branch, FY1978 to FY1986
(Per cent)

Branch	1978	1982	1984	1986
Food	35.2	13.7	12.1	13.3
Beverages	56.6	56.6	55.5	33.8
Tobacco	89.4	74.8	79.0	71.0
Textiles	33.6	38.0	40.5	32.8
Leather & shoes	28.1	24.0	22.2	18.3
Wood & furniture	12.4	16.5	31.8	31.2
Paper & printing	71.7	80.2	73.1	66.5
Chemicals ^{a/}	86.4	80.6	81.4	82.4
Non-metallic	31.4	46.4	48.7	53.3
Metals	86.2	95.2	96.3	93.3
Total	47.4	42.9	42.8	39.7

a/ Excludes oil refinery.

Source: CSA, Results of the Survey of Manufacturing Industries, various issues.

Statistics collated by the MOI from corporation budgets suggest that the ratio of purchases of imports to total consumption of inputs is somewhat lower, averaging 30.4 per cent for the period FY1985 to FY1989 (see Table A-0), though these figures are thought to cover only those imported inputs purchased with foreign exchange (excluding those imported goods purchased in Birr from state distribution agencies) and so may be considered an underestimate of total import consumption. The proportion of imports in total consumption is slightly higher in the case of direct materials (mostly raw materials but including some intermediate goods) than for indirect inputs (mostly intermediate goods and such inputs as packaging materials), though there marked variations between corporations. Virtually all the spare parts used by the corporations are imported, with the notable exception of the National Food Corporation, one of the few IPEs to have forged strong links with engineering enterprises in the small-scale industry sector.

As a proportion of the total corporation expenditure on imported inputs, direct materials are by far the most important, accounting for 78 per cent of imported inputs, whereas indirect inputs account for only 9 per cent and spare parts 13 per cent. Clearly, import dependence reflects both the limited linkage to a domestic resource base and the weakness of Ethiopia's basic industrial structure.

Import dependence puts a heavy strain on the government's foreign exchange budget and reduces the net foreign exchange savings generated by the industrial sector. Moreover, in the context of foreign exchange constraint, reductions in the corporations' foreign exchange budgets are more likely to curtail output and impair efficiency. At present, both public sector managers and the MOI identify foreign exchange shortages as one the principal constraints facing the industrial sector. The shortage of foreign exchange is even more pressing in the case of private sector enterprises whose allocation is residual (see Section 4.3).

In an effort to exploit a wider range of domestic resources, the government encourages both though the development of resource based industries (such as ceramics and caustic soda) and strengthening linkages between industry and the primary sectors of the economy. However, this policy is hampered by contradictory sectoral objectives (see Section 5.2 and 5.4). Food production is priority for agriculture, not production of industrial cash crops. Likewise, investment in the mining sector has been directed primarily at the development of high-value precious metals for export, not basic industrial minerals. Consequently, a wide range of raw materials that could be produced in Ethiopia are not at present, or are produced in insufficient quantities: jute, tobacco, malted barley and hops to mention just a few. Closer co-operation between Ministries is essential if import dependence for basic raw materials is to be reduced.

Furthermore, while the requirement to purchase domestic raw materials ensures that they are used when available, the centralised distribution system does not guarantee that these will be supplied regularly at a suitable price and quality. Under these circumstances enterprises often prefer imported substitutes.

The solution may be to give producers greater control over the source and price, particularly as regards quality, of their inputs. Already, a number of enterprises have taken steps along these lines by signing supply contracts with farmers or purchasing land to cultivate industrial crops themselves (see Section 4.3).

Dependence on imported capital goods can only be reduced in the long-term, by increasing investment in these sectors through such projects as the Akaki Spare Parts Factory. This factory will address both the immediate problem of dependence on imported spare parts and the longer-term objective of developing an indigenous engineering capability. While engineering - in its widest sense - must be the priority, there is also considerable potential for import substitution projects aimed at producing intermediate goods for the industrial sector and agriculture. At present, most of the chemicals used in tanneries and all fertilisers and insecticides are imported.

There are also opportunities for strengthening linkages within the industrial sector, particularly by sub-contracting from large-scale public enterprises and small-scale industries and cooperatives. At present a few corporations, notably the NFC, purchase tailor-made spare parts from SSIs. Otherwise small and large-scale manufacturing enterprises operate independently. This is regrettable because SSIs can specialise to a degree that the large, public sector enterprises cannot afford; their flexibility could allow them to assist the IPEs in fulfilling demand peaks without costly increases in capacity; and they could provide regular inputs of domestically manufactured inputs and components. REVOMETAL in PDR Yemen, for example, has been able to increase production of LPG cookers with a low capital outlay by subcontracting assembly work to rural cooperatives. Integration of the industrial sector along these lines will bring sector economies of scale, diversify production and respond to social objectives such as regional development.

2.8 Regional distribution

Primacy is a characteristic of most developing countries and reflects the concentration of infrastructure (transport, communications and utilities), skilled labour and markets in the major urban centres. In Ethiopia industry is concentrated in three regions: Shoa, containing the capital; Eritrea, in the north of the country; and Haraghe to the east (Table 2.29). Within these regions industrial activity is largely restricted to the largest towns (Addis Ababa, Asmara and Dire Dawa). This particularly true of modern large-scale industries, as the data for the MOI supervised enterprises indicates. Only Shoa and Eritrea, the two regions with the longest history of industrialisation, have a diversified industrial base providing opportunities for linkage. In Haraghe two textiles plants and a brewery dominate the industrial sector. A similarly truncated industrial structure is seen in Wollo, Gojjam and Arsi, while seven of the fifteen regions have minimal industrial activity or none at all.

Table 2.29: Regional distribution of manufacturing value added and employment, selected years
(Percent shares)

Region	1984	1980a/		1986a/		1988b/	
	urban population	MVA	Emp.	MVA	Emp.	MVA	Emp.
Shoa	45.6	67.8	63.6	63.4	62.8	73.6	68.1
- Addis Ababa (29.8)	(29.8)	...	...	...	...	(55.7)	(50.0)
Eritrea	8.6	17.2	17.5	26.9	18.8	11.4	14.1
Haraghe	6.6	6.3	10.0	6.0	9.8	8.3	10.2
Other regions	39.2	8.7	8.9	3.7	8.6	6.8	7.5

a/ Enterprises employing ten or more persons.

b/ Ministry of Industry supervised enterprises.

Source: MDI, Statistical Bulletin, VI, June 1989; and CSA, Survey of Manufacturing and Electrical Industries (1985/86), January 1989.

While the government is committed to a policy of balanced regional growth, the TYPP recognises that opportunities for industrial decentralisation are, for the most part, limited to the development of resource based industries. Even then, the cost of installing utilities in a remote location, constructing communications and high freight charges may rule out the exploitation of an otherwise attractive resource (see Section 5.4 and 5.5). Several large-scale public sector enterprises have been established outside the traditional industrial centres (the Kombolcha Textile Mill in Wollo, Bahr Dar Edible Oil Mill in Gojjam and Assela Maltery in Arsi, for instance). Under the TYPP, the industrially underdeveloped regions were to receive 46 per cent of planned investment (though Shoa was still to receive almost of half total investment), their share of total production was expected to rise from 5.5 percent in FY1984 to 32.4 per cent in FY1994 and they would account for 26.6 per cent of industrial employment by the end of the planning period. Although planning committees at the regional and awraja level do co-ordinate economic activities, planners in central government often have little experience of regional conditions. Their targets are far too optimistic.

The new "market oriented economic system" will provide a far more favourable environment for regional industrial development. Small-scale industries supplying discrete regional markets will be able to develop, taking advantage of the natural protection afforded by high transport costs. Large-scale public enterprises will be able to disperse their assembly activities through sub-contracting agreements. Small-scale service industries will also be possible. At the same time, private entrepreneurs will be able to secure concessions to exploit Ethiopia's substantial mineral wealth, much of which is found in the peripheries of the country.

2.9 Small-scale industries and handicrafts

Small-scale industries (SSIs) and handicrafts^{9/} make a significant contribution to Ethiopia's manufacturing activity. Estimates based on HASIDA's 1984/85 SSI survey, the handicrafts survey of 1985/86 - the most comprehensive to date - and CSA surveys of the manufacturing sector, suggest that SSIs and handicrafts accounted for about 45 per cent of total employment in the manufacturing sector, 23.4 of total fixed assets, 13.2 per cent of gross production value and 23.8 of manufacturing value added (Table 2.30). Due to the under recording of informal, unregistered enterprises these figures are likely to underestimate the importance of SSIs and handicrafts to the economy significantly.

Thirty years ago SSIs and handicrafts had a central role in the manufacturing sector but since then they have been eclipsed by large-scale public sector industrial enterprises. In 1961, SSIs and handicraft activities were thought to account for 69 per cent of gross manufacturing output^{10/}. Their share fell to 63 per cent in 1975, 45 per cent in 1981 and, on the basis of the above estimate, 13.4 per cent in 1985. This relative decline resulted both from the rapid growth of the modern, public sector industrial sector, the

9. Analysis of the Small-Scale Industry sector is hampered by the use of several definitions of SSIs and sample surveys with differing levels of coverage and methods of sample selection. For HASIDA's purposes, SSI's are defined as "any industrial activity which uses motor power and machines and which has fixed assets of a value which does not exceed Birr200,000 excluding buildings". Under current legislation (Special Decree No9/11) the investment ceiling used in the definition of SSIs is Birr2 million for enterprises owned by individuals and Birr4 million for those owned by business associations and co-operatives. Central Statistical Authority manufacturing sector surveys, on the other hand, cover enterprises which employ more than ten persons and use power driven machinery. Comparison with a Ministry of Industry "Directory of Manufacturing Establishments" indicates that the latest survey covers less than half the number of enterprises employing more than ten persons. Clearly, the CSA surveys provide only partial coverage of the small-scale industries as defined by HASIDA's criteria. HASIDA's definition has been used for the purpose of this study. All these surveys distinguish small-scale industrial activities from handicrafts. HASIDA defines a handicraft as an activity which primarily uses manual skills and hand tools.

10. World Bank, Ethiopia Industrial Sector Review, Report No.5301-ET, December 16, 1985.

stagnation of private investment and the poor performance of SSIs. Estimates of SSI and handicraft activities indicate that value added grew by an average of only 2.2 per cent per year in real terms over the 1980-1987 period while the medium and large-scale manufacturing sector grew twice as fast.

Table 2.30: Contribution of Small-Scale Industry to total manufacturing activity, 1984/85

Branch	Number of Enterprises	Employment	Fixed Assets Mn Birr	GPV Mn Birr	MVA Mn Birr
MSIs	381	90,141	703.6	2,909.3	715.2
SSIs	7,684	36,846	216.2	409.7	210.7
Handicrafts	15,433	40,000 ^{a/}	8.7	38.7	21.5
Total manufacturing sector	23,519	165,257	928.5	3,357.7	974.4
As per cent of total manufacturing sector					
- SSIs	33.4	22.3	23.3	12.2	21.6
- Handicrafts	65.7	24.0	0.1	1.2	2.2

a/ Those employed in handicraft cooperatives only.

Source: NASIDA, Report on Survey of Private Small-Scale Manufacturing and Service giving Establishments (1984/85), (1988, extracts only); and CSA, Survey of Manufacturing and Electrical Industries (1985/86), January 1989.

Few private enterprises were established in the period immediately following the nationalisations of 1975 but the creation of HASIDA in 1978, as a supervisory and co-ordinating body for the SSI sector responsible for business promotion (see Section 4.2), did much to restore business confidence. Its extension services, assistance in organising co-operatives, particularly in the handicrafts sector, and work as an advocate of small-scale industry demonstrated that the government saw a role for the private sector within the framework of a centrally planned economy. The number of applicants for HASIDA licences has grown slowly but steadily from 57 in 1982/83 to 402 in 1987/88, followed by a surge of 1,200 applications in the five months after the promulgation of Special Decree No.9 in July 1989. Clearly the private sector is prepared to invest where conditions are deemed favourable. Unfortunately HASIDA's licensing procedures, while intended to ensure the development of appropriate industries, have worked as a break on the creation of new enterprises (see Section 4.3). Although the number of new projects licensed by HASIDA increased from 14 in 1982/83 to 145 in 1987/88, a total of 324 enterprises for the six year period, less than one third of the 1,005 applicants were actually licensed. These procedures have recently been revised.

About 50 per cent of 7,684 SSIs identified in the HASIDA survey are engaged in the food processing sector (Table 2.31). Most of these are bakeries, grain mills and edible oil presses many of which operate on a custom basis. These traditional activities require limited investment and little training, while controlled prices ensure a regular return on capital. Substantial profits can also be made by the sale of food products on the parallel market. A MOI directory of manufacturing establishments employing more than 10 persons lists 141 bakeries, 30 per cent of all the private sector enterprises registered. Of these 73 were in Addis Ababa. Textiles and garment manufacturing is the second most important SSI activity. Here too traditional activities - tailoring, weaving and knitting - predominate.

Table 2.31: Structure of small-scale industrial activity, 1984/85
(Percent shares)

Branch	Number of Enterprises	Employment	Fixed Assetsa/	GPVa/	MVAa/
Food	50.9	48.2	37.9	50.5	46.9
Beverages	0.2	1.0	0.9	1.8	0.6
Tobacco	-	-	-	-	-
Textiles	28.3	21.4	7.1	12.1	12.6
Leather & shoes	3.7	3.8	1.6	3.7	2.8
Wood & products	5.5	8.2	3.3	4.7	4.8
Paper & printing	0.5	1.9	2.6	10.8	18.5
Chemicals	1.0	2.3	4.5	4.7	4.3
Non-metallic	1.2	2.7	2.6	2.9	2.6
Metal products	4.8	6.1	38.7	7.6	5.8
Unclassified	4.1	4.3	0.8	1.1	1.0

Source: NASIDA, Report on Survey of Private Small-Scale Manufacturing and Service giving Establishments (1984/85), (1988, extracts only).

SSI projects in the chemicals, metals and non-metallic mineral products branches require substantial investments, depend heavily on imported inputs, demand new skills and tend to produce goods with relatively low levels of value added - though still higher than the level prevailing in the public sector. All these factors discourage diversification within the SSI sector. Nevertheless, the range of products manufactured by these branches is already impressive (insecticides, shoe polish and toilet preparations in the chemicals branch; cutlery, structural metal products, light machinery and tools in the metal products branch; marble, finishing stones and building blocks in the non-metallic mineral products branch) and is gradually widening as entrepreneurs take advantage of the wide range of simple products suitable for import substitution.

Entrepreneurs are attracted to the SSI sector by the freedom to determine product prices, allowing them to benefit from scarcity rents by charging high margins. These margins are reflected in the high ratio of value added to gross production value (Table 2.32). For the SSI sector as a whole, the 1984/85 HASIDA survey indicates, 51 per cent of gross production value was value added, ranging from 17 per cent in the beverages branch to 88 per cent in the case of the paper and printing industry. These levels are twice as high as those in the public sector (the only branch in which the ratio was lower was beverages, where the public sector corporation enjoys high margins on luxury products such as beer and spirits) and significantly higher than those in the larger private sector enterprises. There is little reason to believe that SSIs undertake a greater degree of processing than public sector enterprises in the same branch, indeed the dependence of many SSIs on intermediate products manufactured by the public sector and imported materials would indicate just the opposite. Furthermore, most private enterprises benefit from lower wage levels than their counterparts in the public sector (see Section 2.0) and even allowing for lower levels of productivity the wage cost per unit of production is unlikely to be any higher than in the public sector. Consequently, the higher levels of value added may be ascribed to higher profits.

Table 2.32: Value added per unit value of production, 1984/85
(Birr)

Branch	SSIsa/	Privateb/	Publicc/
Food	.48	.26	.23
Beverages	.17	.34	.19
Tobacco	-	-	.19
Textiles	.54	.35	.25
Leather & shoes	.39	.31	.14
Wood & products	.53	.47	.40
Paper & printing	.88	.45	.41
Chemicals ^{d/}	.48	.43	.34
Non-metallic	.46	.42	.21
Metal products	.39	.29	.19
Unclassified	.46	-	-
Total	.51	.33	.24

- a/ 1984/85 MASIDA survey of 7,864 SSIs.
 b/ 1985/86 CSA survey of 196 private enterprises employing more than 10 persons.
 c/ 1985/86 CSA survey of 202 public enterprises employing more than ten persons.
 d/ Excluding oil refinery.

Source: MASIDA, Report on Survey of Private Small-Scale Manufacturing and Service Giving Establishments (1984/85), (1988, extracts only); MDI, Statistical Bulletin, June 1989; and CSA, Survey of Manufacturing and Electrical Industries (1985/86), January 1989.

High domestic market prices, relative to world market prices at the official exchange rate, and the requirement to surrender foreign exchange earnings to the NBE discourage SSIs from exporting their products. Furthermore, the private sector does not have access to the facilities needed to conduct an export trade: communication with buyers and attendance at trade fairs are a particular problem. Besides, acquisition of an export licence is a time consuming process. Yet, despite the sector's domestic orientation, several enterprises have been able to develop export sales of such products as shoes, semi-processed leather and garments. There is considerable potential for the expansion and diversification of exports if a suitable incentive environment can be created.

Although domestic demand for SSI products is strong, the performance and expansion of SSIs is constrained by lack of inputs and capital. SSIs depend heavily on the state marketing agencies for purchases of domestic raw materials, the public sector enterprises for intermediate goods and imports for capital goods, spare-parts and inputs. According to the 1980 HASIDA survey, 36 per cent of SSIs used some imported inputs and 6 per cent of SSIs depended entirely on imports. While comprehensive data is not available, the evidence suggests that SSIs have far lower levels of import dependence than large-scale manufacturing industry. This may be cited as a social advantage of SSIs over large-scale industry.

Since priority is given to the public sector enterprises in the distribution of scarce domestic inputs and foreign exchange, SSIs face acute shortages. In recent years, the shortage of foreign exchange has become particularly acute, with the number of SSIs eligible for foreign exchange allocations limited to around 260 while the budget allocation amounted to less than 20 per cent of the sum requested (see Section 4.3) and perhaps no more than 10 per cent of the sector's true requirement. Even though exporters have priority access to foreign exchange they too face shortages. These enterprises argue that significant increases in the volume of their exports could be achieved if they were allowed to retain a proportion of their foreign exchange earnings to purchase essential inputs.

Some enterprises purchase their inputs on the parallel market at inflated prices in order to maintain production levels. A few have adopted ingenious stratagems to conserve precious inputs (for instance, arranging the cut of leather to maximise the number of articles produced from each hide), or developed recycling activities (manufacturing shoes out of leather scraps discarded by public sector enterprises), or re-process those goods which the public sector producers to excess (production of cutlery out of large-size nails and clothing out of towels and sheets). For the sector as a whole, however, performance is severely impaired by the shortage of materials.

Another fundamental problem facing the SSI sector is the lack of skilled managerial and technical staff. The 1984/85 HASIDA survey, revealed that about three quarters of SSI proprietors have only had primary school education or less, about 7 per cent were illiterate. Less than 2 per cent had received vocational training. Low levels of training are generally associated with low levels of innovation and initiative. Applications for HASIDA licences, for instance, are dominated by a narrow range of projects - bakeries, edible oil presses and tailoring. Few applicants present new project ideas and fewer still introduce technical innovations. Many entrepreneurs regard their businesses as a part time activity carried out in junction with salaried employment or retailing and trading activities.

Furthermore, SSIs have little access to skilled employees. All diploma and degree graduates are employed by the public sector in the first instance. It is only recently that technical school graduates have been appointed through the MOLSA labour exchanges and can be recruited directly by the private sector. Formerly, all technical school graduates were allocated to the public sector.

SSIs are also handicapped by their limited access to bank finance for start-up and working capital. A survey undertaken in 1981/82 indicated that 81 per cent of the SSIs' fixed assets were financed from savings and informal loans. Bank loans financed the remaining 19 per cent. Similarly, between 60 and 90 per cent of the investment in SSI projects licensed by HASIDA in the period 1982/83 to 1987/88 was self-financed or financed through traditional lending institutions^{11/}. Less than one quarter of licensed projects receive medium-term bank financing (see Section 4.2). Short term funding is more accessible, largely because many entrepreneurs already hold accounts with the Commercial Bank of Ethiopia. However, discriminatory rates apply for private sector borrowing and about one quarter of the enterprises interviewed during the 1984/85 HASIDA survey identified the lack of suitable financing facilities as a major constraint on their performance.

In the absence of a strong "venture capital" market, the implementation of new projects is restricted to those with access to private funds: traders for the most part. Traders may have business experience but they bring with them a short-term, commercial outlook which scorns troublesome projects with a long maturity and those requiring substantial investments. Consequently,

11. Traditional lending institutions include money-lenders who charge exorbitant interest rates and generally only lend on short-term basis and the ikub. The ikub is a form of mutual savings cooperative to which members contribute and the funds are distributed by lot or by consensus to an individual in particular difficulties.

the inaccessibility of bank loans for many entrepreneurs helps perpetuate a poorly developed SSI structure.

Shortages of basic inputs have resulted in extremely low capacity utilisation rates. The 1980 HASIDA survey revealed that only 5 out of 72 firms had capacity utilisation rates exceeding 56 per cent and only 27 had capacity utilisation rates exceeding 40 per cent. Capacity utilisation rates have fallen since then. According to the 1984/85 survey the average capacity utilisation rate was only 22 per cent of the full three shift capacity and some enterprises are thought to have laid off workers in recent years due to the lack of production inputs. Capacity utilisation rates are thought to range from 15 to 35 per cent. In contrast, most public sector enterprises were reported to be working at near full capacity.

Under-utilisation of capacity partly explains the higher than expected capital-labour ratio seen in some branches of the SSI sector. The 1980 HASIDA survey revealed that capital-labour ratios were almost twice as high among medium and large-scale industries as they were among the SSIs^{12/}, though there were marked variations between branches. In the beverages, wood and furniture and metal products branches, for instance, the capital-labour ratio for SSIs was only 20 to 30 per cent lower than the ratio for medium and large scale enterprises. The 1984/85 HASIDA survey also shows that capital-labour ratios are lower amongst SSIs than among the public sector enterprises, though only 31 per cent lower as compared with 50 per cent lower five years before (Table 2.33). This confirms the argument frequently cited in favour of SSIs that they offer of cheaper means of generating employment than large-scale public sector enterprises. In Ethiopia, where capital is scarce and labour plentiful, they are also more compatible with the country's factor endowment.

On the other hand, capital-labour ratios are shown to be higher for SSIs in the metal products, chemicals and wood and furniture products branches than they are for corresponding public sector enterprises and higher for all SSI than they were for the larger private sector enterprises. In the wood and furniture manufacturing enterprises this discrepancy probably reflects the under capitalization of public sector enterprises relative to their counterparts in the private sector. In the case of chemicals and metal products industries, on the other hand, the high ratio of assets to labour probably results from under-utilisation of capacity. In such enterprises the incremental changes in levels of capitalization are large and enterprises are unable to reduce the value of fixed assets in response to reduced inputs and so production levels. Furthermore, it is in these sectors, which

12. Eshetu Chole and T. Mulat, *The Pattern of Industrialisation and its Impact on Employment and Incomes in Ethiopia*, ILO, 1983.

depend heavily on imported inputs, that the supply constraints are tightest.

Table 2.33: Productivity and capitalization of small-scale and private sector industries by branch, 1984/85

Branch	Birr per employee			Per employee indicator as percent of public sector		
	GVP	MVA	Assets	GVP	MVA	Assets
<u>7,684 enterprises covered by HASIDA survey</u>						
Food	11,655	5,563	4,615	34.3	72.4	45.4
Beverages	19,939	3,386	5,175	38.5	34.1	44.9
Tobacco	-	-	-	-	-	-
Textiles	6,273	3,368	1,946	50.5	107.7	92.1
Leather & shoes	10,859	4,247	2,462	39.7	107.7	58.7
Wood & products	6,343	3,350	2,372	34.6	45.8	126.5
Paper & printing	64,133	56,399	8,122	244.1	524.8	29.0
Chemicals	22,404	10,662	11,325	59.2	82.6	194.1
Non-metallic	11,792	5,467	5,565	55.9	120.8	12.7
Metal products	13,791	5,377	36,953	27.1	57.0	331.5
Unclassified	2,952	1,368	1,085	-	-	-
Total	11,118	5,718	5,867	41.5	90.8	69.0
<u>199 enterprises covered by CSA survey</u>						
Food	16,084	4,204	2,929	47.4	54.7	28.8
Beverages	34,719	11,916	2,087	67.1	120.2	18.1
Tobacco	-	-	-	-	-	-
Textiles	10,104	3,489	1,402	81.4	111.6	66.3
Leather & shoes	11,341	3,569	1,260	41.5	90.5	30.1
Wood & products	9,236	4,319	2,640	50.4	59.0	140.8
Paper & printing	14,136	6,302	5,199	53.8	58.6	18.6
Chemicals	23,138	9,977	5,254	61.1	77.3	90.1
Non-metallic	9,088	3,813	2,618	43.1	84.2	6.0
Metal products	72,235	20,679	8,330	142.1	219.3	74.7
Unclassified	-	-	-	-	-	-
Total	20,952	6,816	3,656	78.2	108.2	43.0

Source: Unpublished HASIDA survey and CSA, Survey of Manufacturing Industries (1985/1986), January 1989.

Supply constraints also impair labour productivity. The 1984/85 HASIDA survey reveals that the gross production value per employee in the SSI sector was 68.5 per cent lower than in the public sector (Table 2.33). Labour productivity in terms of gross output is considerably lower than the disparity in capitalization. When MVA is considered, however, the disparity narrows to less than 10 per cent. Indeed, labour productivity is higher than in public sector in the case of the non-metallic minerals, textiles, leather, and paper and printing branches. Statistics for private enterprises employing more than ten persons, indicate that productivity levels are higher overall than in those enterprises in the HASIDA survey despite lower levels of capitalization.

Although low capacity utilisation rates and levels of labour productivity - in terms of gross output at least - may suggest that the SSI has less to offer the Ethiopian economy than large scale industry, the performance of SSIs would improve markedly in a more conducive policy environment. Low capacity utilisation rates offer an opportunity for rapid increases in output without substantial investment by the removal of input constraints. An increase in the SSI sector's foreign exchange allocation, for instance, would have an appreciable effect on capacity utilisation rates and production levels.

Table 2.34: Fixed assets per enterprises, 1984/85

Branch	<u>SSIs</u> ^{a/}		<u>Private</u> ^{b/}		<u>Public</u> ^{c/}
	Birr	percent of public	Birr	percent of public	Birr
Food	20,939	.8	74,297	2.7	2,765,262
Beverages	162,137	3.9	68,625	1.6	4,185,955
Tobacco	-	-	-	-	3,142,000
Textiles	7,067	.3	60,194	2.4	2,540,966
Leather & shoes	12,309	.7	85,154	5.0	1,712,923
Wood & products	17,026	4.9	71,750	20.6	347,545
Paper & printing	151,912	1.6	173,889	1.8	9,780,000
Chemicals ^{d/}	124,721	8.2	193,083	12.7	1,514,842
Non-metallic	62,453	.6	82,235	.8	10,955,813
Metal products	229,212	14.7	350,375	22.5	1,556,778
Unclassified	5,456	-	-	-	-
Total	28,134	.8	111,372	3.2	3,497,584

a/ 1984/85 MASIDA survey of 7,864 SSIs.

b/ 1985/86 CSA survey of 196 private enterprises employing more than 10 persons.

c/ 1985/86 CSA survey of 202 public enterprises employing more than ten persons.

d/ Excluding oil refinery.

Source: MASIDA, Report on Survey of Private Small-Scale Manufacturing and Service Giving Establishments (1984/85), (1988, extracts only); MOI, Statistical Bulletin, June 1989; and CSA, Survey of Manufacturing and Electrical Industries (1985/86), January 1989

Recent changes in the legislation governing private sector investment sector have sought to stimulate the expansion of SSIs. Small-scale industry, Special Decree No 9/1989 recognises, can make a significant contribution to the production of consumer good and exports and the generation of employment. HASIDA regards employment generation as one of the principal benefits to be won by providing a more conducive environment for small-scale industry, arguing that the cost of creating a new job opportunity is between 1 and 10 per cent of that in the public sector. Clearly, SSIs offer the cost-effective means of tackling urban unemployment, one of Ethiopia's most pressing social problems. Successful SSIs will also mop up the liquidity within the trading community that fuels the smuggling trade and parallel market. As Table 2.34 indicates, very little capital is needed to establish an SSI.

Alongside SSIs are a wide range of traditional handicrafts practised in small workshops, generally using labour intensive techniques. The results of an unpublished HASIDA survey of urban informal handicraft enterprises indicate that two activities, tailoring and weaving, dominate the handicraft sector (Table 2.35). Many of these activities are the traditional preserves of ethnic groups - Gurage metalworkers and Dorsie weavers, for instance - and their workshops are often congregated in separate quarters of the city. Levels of capitalization in these enterprises are extremely low. HASIDA estimates that cost of job creation is less than 1 per cent that in of IPEs and in some cases - basketry, for example - the capital required to establish an enterprise is negligible. High ratios of MVA to gross production indicate that they too enjoy considerable margins, though turnover is generally small. Many of the enterprises double-up as retail outlets.

Table 2.35: Structure of handicrafts activities, 1985/86

	Estab- lishments	Percentage share			Ratio GVP to MVA	Ratio MVA to assets
		Fixed Assets ^{a/}	GVP ^{a/}	MVA ^{a/}		
Gold & silver	1.5	4.1	2.4	2.0	.47	1.2
Knitting	1.5	4.7	2.4	1.6	.36	.8
Leather works	.9	.0	.9	.6	.33	35.1
Metal works	2.4	1.1	2.8	2.4	.46	5.3
Pottery	3.8	.2	1.5	1.7	.60	24.3
Tailoring	46.6	84.0	43.0	51.2	.65	1.5
Weaving	40.4	4.1	43.1	37.1	.47	22.1
Woodworks	1.1	1.3	2.1	2.0	.53	3.9
Others	1.8	.5	1.8	1.5	.47	6.3
Total	15,438	8,696	38,741	21,302	.55	2.4

a/ Total in Birr.

Source: Based on Table A-0.

Handicrafts also play an important part in the rural economy. No survey of rural handicrafts has been undertaken in recent years but a survey carried out in 1972/73 indicated that about 250,000 people were employed in household enterprises in rural areas. Almost half of them were employed in weaving, though household enterprises manufacture a wide range of products. One recent study argues that handicrafts are "the principal suppliers of manufactured goods for most of the rural communities today"^{13/}. Most peasant households engage in some handicraft activities, such as basketry and weaving, but there are also handicraft communities spread throughout the countryside. These communities are usually despised by their neighbours, while agriculture is esteemed. HASIDA tries to combat this prejudice in order to promote handicrafts activities as a means of income generation in rural areas.

HASIDA has sought to develop and expand the handicraft sector by organising craftsmen into co-operatives (see Section 4.2). By 1987 there were 852 co-operatives with 37,046 members, most of them in urban areas. These cooperatives help producers purchase inputs, market their products and gain access to credit at preferential rates. They also provide a means by which the government can upgrade skills and introduce new products, transforming the handicraft sector into small-scale industry. The development of producer co-operatives introduces new forms of association which correspond to the government's policy of socialisation. Levels of capitalization are higher than in the informal handicraft sector and, in the case of producer cooperatives, often higher than the small-scale industrial sector.

13. T. Mulat, Some Notes on Employment in Small-Scale Manufacturing and Handicrafts Industries, mimeo, Institute of Development Research, Addis Ababa University, 1982.

3. PROBLEMS AND PROSPECTS OF SUB-SECTORS OF MANUFACTURING

3.1 Food processing

In terms of gross production value, food processing is the leading industrial activity, accounting for 22.7 per cent of total output in the manufacturing sector in 1985/86. Food processing also ranks second in terms of its contribution to MVA (18.6 per cent) and employment (20 per cent). More important, however, it has the strongest backward linkages to the economy and lowest level of import dependence: in 1985/86 only 13.3 per cent of the inputs used in the branch were imported. This reflects the strong resource base of Ethiopian agriculture and the government's policy of developing industries which satisfy the basic needs of the population. The sector is dominated by four activities - primary and secondary grain processing (which accounted for 42 per cent of gross production value in 1985/86), sugar refining (29.7 per cent), production of vegetable oils and fats (10.3 per cent), and meat processing and the manufacture of dairy products (11.3 per cent) - all of which are oriented towards the domestic market.

Owing to its dependence on domestic raw materials, the branch has been affected by the agricultural sector's poor performance in recent years and the supply of raw materials has emerged as one of principal constraints on growth. Over the 1980/81 to 1986/87 period the branch averaged an annual growth rate of 6.3 per cent, one per cent lower than the average for the industrial sector as a whole, and in 1984/85, 1986/87 and 1987/88 gross production value at constant prices actually fell. While shortages of raw materials are particularly acute during drought years, the problem is, fundamentally, one of developing an agricultural marketing system that will stimulate and direct expansion in the peasant sector which still dominates Ethiopian agriculture (see Section 5.2).

If output is to be increased in the near future, these supply constraints will have to be resolved. Liberalisation of the grain marketing system is a step in this direction. A free market in agricultural products will provide an incentive for farmers to step up and diversify production. Abolition of the Agricultural Marketing Corporation's monopoly on domestic trade in grain will facilitate the flow of farm produce into the urban and industrial areas. It will also allow industrial enterprises to establish direct contact with farmers. One approach, already practised on a small-scale by the spice processing factory, is for factories to establish contracts with out-growers. This will enable the food processing industry to determine the type of raw materials it needs, ensure better quality control and secure more reliable supplies than it can through an intermediary. Another approach is for the factories themselves to become involved in the cultivation of their own raw materials, as in the case of the Ethiopian Sugar Corporation's large agro-industrial complexes.

Primary grain and oil seed processing are the principal activities of the Ethiopian Food Corporation (EFC). The corporation operates fifteen wheat flour mills, four of which also process edible oils and another four undertake secondary cereals processing. Most of these mills were built in the 1960s or before. Their production capacity varies from 45 to 120 tonnes per day. Output increased by 52 per cent from 114,800 tonnes of flour in 1978/79 to 174,600 tonnes in 1979/80 when new plant was commissioned at three of the mills, but then fluctuated around this level during the 1980s. By 1985/86 production had reached 195,500 tonnes.

Irregular supplies of grain, purchased from the Agricultural Marketing Corporation (AMC), affect production. During the drought of 1983/84, output dropped by 16 per cent over the level in the previous year to 134,100 tonnes. In order to prevent shortages of basic commodity occurring in urban areas EFC has, increasingly, had recourse to imports: in 1985/86 20.5 per cent of the flour mills' raw material requirements were met by imported wheat as compared with only 1.5 per cent two years before. Domestic raw materials are, furthermore, of poor quality. The levels of impurities are high and poor storage often results in grain deterioration. Production is also handicapped by the age of existing plant, lack of spare parts and skilled personnel for servicing and maintenance work.

There are no plans to establish new industrial grain mills. Instead, EFC plans to rehabilitate five of its grain mills to increase output. Work on the Dire Dawa Flour Mill is currently at the design stage. When completed the mill will have a capacity of 39,000 tonnes per year. Renovation work is also planned for mills in Addis Ababa, Debre Zeit, Asmara, Nazareth and Kaliti.

In recent years, EFC staff have voiced concern that the wheat flour produced is not ideal from a nutritional point of view. After milling the bran (12 per cent by weight) and germ (3 per cent) are separated from the endosperm and used in the production of animal feeds (see below). Since the bran and germ contain about 70 per cent of the wheat grain's minerals and vitamins and most of the fibre, the production process greatly lowers the nutritional content of the flour. There are plans to produce whole meal flour on a trial basis.

EFC also operates a mill producing maize flour - the Debre Zeit Maize Flour Mill, established in its present form in 1978. This draws on domestic supplies of maize which have increased rapidly in recent years as peasant farmers and the state farms have extended the area under maize cultivation (see Section 5.2). Output has increased from 2,400 tonnes in 1981/82 to 18,759 tonnes in 1985/86, though this remains well below the plants capacity of 110 tonnes per day. Again, the supply and quality of raw materials are

a major constraint on production. Most of the output is mixed with wheat flour for bagging and sale.

EFC plans to diversify the range of products manufactured from maize by establishing a wet maize processing plant. The plant, costing an estimated Birr80 million, would produce 12,200 tonnes of starch, 9,150 tonnes of maltose and glucose syrup, 19,825 tonnes of fructose syrup and 41,000 tonnes of partially ground maize. These products are currently imported. A Belgian company has shown interest in participating as a joint-venture partner.

The large industrial mills operated by EFC supply most of the grain used in urban areas. In rural areas, on the other hand, flour is either hand milled in the home or supplied by small-scale grain mills. According to the 1985/86 HASIDA survey there were between 10 and 20,000 of small-scale mills in operation, each employing 2 or 3 people. The production process is simple, the grain is cleaned manually and then milled. There is no sifting stage and so the flour produced is whole meal. Until the construction of a small production facility at the Kaliti Metal Factory, all the machinery for these mills was imported. They are either electrified or diesel-driven and have a capacity of up to 400 quintals per hour. Imported small-scale mills cost about Birr25,000 and so can only be purchased with a loan from the Agricultural and Industrial Development Bank (AIDB). Lengthy delays in the application for these loans restricts the establishment of new facilities. Mill owners also have difficulty acquiring spare parts and there is no training available in maintenance procedures. These services could be provided by the newly established production facility.

EFC's facilities for the secondary processing of grain products are limited to the production of pasta, biscuits, bread and baby food. Pasta is produced at three of the grain mills, two in Addis Ababa and the other at Debre Zeit. Output of pasta jumped from 14,000 tonnes in 1978/79 to 53,600 tonnes in 1979/80 when the Ada Flour, Spaghetti and Macaroni Factory was commissioned, but tailed off to 11,000 tonnes in 1982/83. Production recovered to an average of 19,000 tonnes in the period FY1985 to FY1988. This is well below installed capacity. Biscuits and galetta are produced at the Kaliti Food Factory, commissioned in 1979. Output of biscuits averaged about 240 tpa and galetta about 7,500 tonnes over the 1981/82 to 1985/86 period. EFC also operates two large-scale industrial bakeries. Nine other large-scale bakeries are run by municipal authorities and other government institutions. A new integrated factory at Asmara is currently at the design stage. This would produce 48,750 tpa of flour, 11,375 tpa of pasta and 4,850 tpa of bakery products. In order to supply the bakery sector with yeast, the Ethiopian Sugar Corporation (ESC) has plans to establish a yeast factory with a capacity of 1,125 tonnes per year.

Production of bread and is better suited to small-scale operations serving a local market than large industrial operations.

The 1985/86 CSA survey records 56 small-scale private sector bakeries which accounted for about one-third of the gross production value in this sub-branch. The number is certainly larger than this. A directory of manufacturing establishments published by the MOI in 1987 lists 151 bakeries, a few of which also produce cakes, biscuits and confectionery. Output of bread - from those establishments included in the CSA survey - has increased from 21,800 tonnes in 1978/79 to 33,700 tonnes in 1985/86, reaching a peak of 40,700 tonnes in 1984/85.

Bread has gradually become a staple in urban areas. Unfortunately, AMC cannot supply enough grain to meet the demands of all producers and the proliferation of small-scale bakeries has intensified competition for flour. Consequently, private sector bakeries have come to depend increasingly on grain dealers whose prices are significantly higher than those of the official distribution channels. Nevertheless, private investors still view a bakery as an attractive investment and applications for licences in this sector have multiplied in recent years. HASIDA has expressed its concern that these applications are imitative or speculative: many investors cannot conceive of projects in other fields or are simply interested in the official allocation of flour which they can then sell at a substantial profit. Abolition of the AMC's monopoly on the domestic trade in grains and the removal of price controls will encourage more regular supplies to the urban areas, even though prices for wheat may rise, and supply constraints are likely to become less severe in the future.

EPA's only facility for the production of processed foodstuffs is the Faffa Food Factory at Addis Ababa, established in 1979. This blends wheat, protein rich bean flour (soya and field beans), minerals and vitamins to produce baby food and food supplements. There are currently four products: Faffa used in porridge form for children up to 5 years; Dube Deket used for undernourished adults and lactating mothers; Meten, a precooked weaning food; and Edget, which is milk based and used as a breast milk substitute or supplement. During the early 1980s about half the plant's output was used in the government's famine relief effort. Production capacity was increased from 12,000 tpa to 22,000 tpa in 1985. The following year output reached 21,600 tonnes. This is far below the current and projected effective demand for such products. On the basis of 36kg consumption of Faffa products per child between 1 and 4 years of age, demand is expected to reach 41,000 tonnes in 1990 and 67,000 tonnes in the year 2000. To meet this demand EFC plans to establish a new baby food factory with a capacity of 17,500 tpa. The Corporation has also planned a publicity campaign to advise mothers of the nutritional benefits to be gained from using breast milk supplements and prepared weaning products. Linked to this project is EFC's plan for a soya bean processing complex. At present most of the soya flour used by the factory is imported. EFC considers that this project might be attractive to a

joint-venture partner since a proportion of the output could be exported.

Edible oil and vegetable ghee substitute accounts for 15 per cent of EFC's gross production value. The corporation manages fourteen mills manufacturing these products (one of which also produces soap) from locally grown oilseeds (sesame and niger seed). All but two of these factories were built before 1974. Consequently, much of the installed capacity is obsolete and several plants are scheduled to be phased out. Output increased from 9,400 tonnes in 1978/79 to 19,500 tonnes in 1983/84, when the Modjo Edible Oil Mill and the Bahr Dar Edible Oil Mill were commissioned, but has dropped since then to 12,600 tonnes in FY1988. This is partly because of technical problems but also because of difficulties in acquiring raw materials. In recent years the AMC price for oilseeds has fallen relative to cereals and production of this crop has stagnated (see Section 5.2). The problem of raw material supplies is particularly acute for small-scale private sector mills. According to a HASIDA there were about 170 private sector mills operating in 1985/86, ten of which employed fewer than ten persons. They are thought to produce a total of about 5,000 tpa.

At present the level of edible oil seed production is inadequate to meet domestic demand: on the basis of CSA statistics, per capita consumption of edible oil is less than 1kg per year. In order to increase production, EFC plans to rehabilitate both the Hamaressa and Addis Ababa Edible Oil Mills raising capacity by 22,400 tpa of edible oil and 6,000 tpa of ghee substitute. There are no plans for the construction of new edible oil mills.

An important by-product from the oil seed milling process is oil cake, used as a animal feed supplement. It is also produced by oil mills producing inedible (cotton seed, linseed, and rapeseed) oils. Output has fluctuated from 74,200 tonnes to 17,100 tonnes over the 1978/79 to 1985/86 period, though there has been a general upward trend, with output reaching 26,400 tonnes in 1985/86. Over the 1981/82 to 1985/86 period 68 per cent of the domestic production of oilcake was exported, earning an average of Birr8.3 million in foreign exchange. Exports are mostly of cotton seed cake. The more popular nigerseed cake is virtually all sold to livestock owners in Ethiopia. As domestic consumption has increased in recent years the surplus available for export has fallen. In years of low production most of the output is sold on the domestic market.

EFC also sells grain mill by products for use as animal feed. A small proportion of the 80,000 tpa maize and wheat flour by-products (reject grains, wheat and maize bran, and maize germs) sold each year are sold to the three animal and poultry feed plants managed by the Livestock Development and Meat Corporation (LDMC). The largest of these, at Kaliti, was established in 1979. That year

production jumped from 2,800 tonnes to 63,000 tonnes but since then production has fluctuated at around 18,000 tonnes, reaching 22,000 tonnes in 1985/86. This is only a small fraction of the potential demand in a country that boasts the largest livestock herd in Africa (see Section 5.2). The majority of the granary by-products are sold direct to livestock owners and dealers, particularly those involved in fattening cattle, and used without the addition of mineral and vitamin supplements. EFC plans to establish an Animal Feed Processing Plant which would use those by-products currently sold unprocessed to produce feed pellets and powders with a higher nutritional value. An FAO financed pre-feasibility study argues that the project - with an estimated cost of Birr10 million - would be financially viable and would also provide a valuable input to the livestock sector.

Vegetable and fruit processing is undertaken by two plants managed by the Fruit Development Corporation (FDC; under the Ministry of State Farms Development). These produce vegetable soup, bean and tomato paste, and canned vegetables and fruit. Production of tinned orange juice stopped in 1979. Output of processed vegetable products has fluctuated in recent years, though the general trend has been downwards: 6,766 tonnes of vegetable soap were produced in 1978/79 but only 1,450 tonnes in 1985/86; 153 tonnes of tomato paste were produced in 1978/79 but production ground to a halt in the early 1980s and then resumed in 1983, after the plant had been refurbished, and reached 1,900 tonnes in 1985/86; similarly production of marmalade began in 1981/82 but was subsequently suspended and then resumed in 1984/85, output was 350 tonnes in 1985/86, 75 per cent lower than the year before.

Irregular supplies of raw materials - pulses in particular - have been one of the major constraints on production. So too has the need to import cans. Imported cans are expensive and deliveries unreliable. Given Ethiopia's inadequate storage and distribution facilities, the expansion of processing capacity for fruit and vegetables merits consideration. Production would be targeted at the domestic market, though exports of horse bean paste to the Middle East could be considered. Ethiopia already exports fresh fruit and vegetables but most of these are sold at a loss. Even so, the price of exported fresh fruit and vegetables is generally more attractive than for processed and canned products.

Production of spices is one area in which EFC does have export potential. A spice extraction plant was established in 1970 as joint-venture between an Ethiopian and a US company. The plant was designed to produce 180 tpa of semi-finished red pepper oleoresin for export. Owing to difficulties in acquiring raw materials - about three quarters of which are supplied by small-holders, through the AMC - production never reached full capacity. Technical assistance from UNIDO helped the factory install a facility for the separation of oleoresin paprika (75 per cent by weight) and semi-finished oleoresin capsicum from crude oleoresin pepper. By

purchasing its inputs directly from small-holder suppliers and increasing the producer price by 75 per cent above the level formerly paid by the AMC, the factory has been able ensure regular supplies of inputs. As a result, production increased to near full capacity, the ex-factory price of products has increased and the sales have diversified. About 70 per cent of production is exported (an average of 105 tonnes per year over the period FY1985 to FY1989, with average earnings of Birr6.7 million) mostly to the USSR and Europe.

Although the market for oleoresins is extremely competitive, there is scope for the expansion of export sales. However, if export production is to be increased, indeed if production is to be maintained at the current level, the plant will have to be rehabilitated. The machinery used in primary processing is now eighteen years old. It is prone to frequent breakdowns and is inefficient. Furthermore, the facilities for quality control and plant maintenance are inadequate. The Ethiopian Spice Extraction Factory also has plans to diversify production, currently restricted to the processing of oleoresin paprika and capsicum. A much wider range of spices could be processed by the same plant if small-holders could be persuaded to begin cultivation on a commercial scale. Research work is currently under way to identify the most promising areas for development. These are likely to include processing of ginger, garlic and black pepper tumeric. Diversification may help the plant level out seasonal variations in production activity.

Sugar is produced at two agro-industrial complexes operated by the Ethiopian Sugar Corporation (ESC; see Section 5.2). The largest of these, at Wonji in Shoa, has a production capacity of 100,000 tonnes of refined sugar per year. The other, at Methara, has recently been upgraded to a capacity of 95,000 tonnes per year. Production of refined sugar increased from 155,000 tonnes in 1978/79 to a peak of 181,000 tonnes in FY1986 and then fell to 168,000 tonnes in FY1987 and 175,000 tonnes in FY1988. Production of molasses, the principal sugar refinery by-product, has followed a similar pattern. Output averaged 64,500 tonnes from 1981/82 to 1985/86. Although the effective demand on the domestic market exceeds production - indeed sugar is rationed in some urban areas - and the quality of the sugar produced is sometimes below international standards, ESC exports about 16.5 per cent of its output (averaging 29,000 tonnes over the FY1985 to FY1989 period). About half the molasses produced is also exported (an average of 37,100 tpa in the five years to FY1989). In order to meet the growing domestic market for refined sugar the government gave the go-ahead for a new \$225 million sugar complex at Finchaa in 1989. The new complex has a planned capacity of 85,000 tonnes in the initial phase, rising to 127,000 tonnes in the eighth year. It will also begin processing of sugar by-products, through the establishment of an ethanol plant. This will be used as a petroleum substitute.

ESC also operates two factories manufacturing confectionery products for the domestic market. Six small-scale private sector enterprises also produce confectionery. Output of these products has fluctuated around 4,000 tpa over the 1978/79 to 1985/86 period. There are no plans to install new capacity in the public sector, though this sector may have potential for further small-scale development.

Total meat production amounts to about 415,000 tpa (equivalent to 13-14 kg per capita). Most of the meat for domestic consumption in rural areas is supplied by backyard slaughtering, through private sector retailers. About half the meat sold in urban areas is slaughtered at municipal abattoirs and sold fresh or frozen through the official retail channels. Approximately 2.3 per cent (an average of 9,500 tpa over the 1981/82 to 1985/86 period) of the meat produced undergoes further processing. Processed meat is unsuited to local eating habits, most of it is either exported or sold to the armed forces. Nevertheless, one would expect that Ethiopia's huge livestock herd could provide a sound basis for the development of export oriented meat processing facilities.

Unfortunately, the Livestock Development and Meat Corporation (LDMC), which operates six meat processing and packaging facilities, has been plagued by high production costs, unreliable deliveries of packaging products and irregular supplies of livestock, all of which have impaired the Corporation's profitability and export potential. LDMC purchases animals both for export and slaughter. It has to compete with private sector dealers who can often offer more favourable terms. Moreover, the quality of animals delivered for slaughter is generally poor. Endemic animal diseases, the infrequent use of feed supplements and the lengthy trek to slaughterhouses all contribute to poor quality. Abattoirs often have sloppy hygiene practices, the cold storage facilities are limited and slaughtering methods are often inefficient. NLSC, for instance, complains that flaying and storage methods often cause faults to hides and skins. LDMC is currently trying to resolve some of these problems by upgrading the slaughterhouse facilities at four of its abattoirs.

LDMC produces corned beef, beef in jelly, boiled beef, minced meat and wot (Ethiopian curry made from beef and mutton, accounting for 75 per cent of output from 1981/82 to 1985/86) in addition to meat products which undergo no processing - frozen carcasses and boned meat. Output of meat products has fallen from a peak of 15,800 tonnes in 1981/82 to just 5,050 tonnes in 1985/86. This is largely due to shortages of livestock and financial constraints. As production tailed off, resources were concentrated in those plants which process meat for export. Production of wot for the domestic market has dropped from 12,800 tonnes in 1981/82 to 3,500 tonnes in 1985/86 - from 81 per cent of total output to 70 per cent. Although LDMC has given priority to exports, which have averaged 1,900 tonnes (Birr5.8 million) over the period 1980/81 to

1986/87, most of its export sales have been made at a substantial loss owing to high production costs. Consequently, prospects for the expansion of the meat products exports in the near future are poor.

In the mid-1980s about 85,000 tpa of slaughterhouse by-products were collected through the public abattoirs, of which about 7,800 tpa was used for human consumption and 49,000 tpa was used for industrial purposes (meat and bone meal). Meat and bone meal contains a high proportion of easily digestible proteins and is used in feed compounds for poultry and pigs. However, due to the limited capacity of feed mills in Ethiopia most of the meat and bone meal produced by the abattoirs is exported. Blood meal is also a valuable feed supplement, though production is limited by the low capacity of dry-rendering plants at the public abattoirs. Technical fat is used in the manufacture of tallow for sale to the soap and chemical plants, though it could also be used in the manufacture of high energy feeds for dairy cattle. Domestic consumption of tallow amounted to 290,000 tonnes in 1985/86, 96 per cent of which was supplied by Ethiopian abattoirs. A UNIDO study^{14/} has argued that the range and volume of slaughterhouse by-products used in the manufacture of animal feeds could be increased, thereby strengthening the linkages between the industrial and agricultural sectors.

Dairy farming is the most intensive element of the livestock sector. Most of the milk supplied to urban areas is provided by state farms which make use of animal feeds and cultivated pastures. LMDC operates two milk processing plants producing pasteurised milk. Output has increased steadily in recent years, rising from 80,000 hl in 1978/89 to 130,000 hl in 1985/86, in line with the expansion of state dairy farms. Small quantities of milk powder (300 tonnes in 1985/86) are imported to supplement domestic production. A limited quantity of dairy products are processed - an average of 550 tpa of butter and ghee and 80 tonnes of cheese over the 1981/82 to 1985/86 period - at a plant operated by LMDC. Virtually all processed dairy products are sold in urban areas.

3.2 Beverages and tobacco

The gross production value of Ethiopia's beverage industry grew by an average of 12.4 per cent per year in real terms between 1978/79 and 1986/87. The branch is dominated by four breweries which accounted for 58 per cent of gross production value in 1985/86. While brewing has seen the fastest rate of growth in recent years, largely because of the commissioning of a new brewery

14. UNIDO, Assistance to the establishment of a national utilization scheme for slaughterhouse by-products (SI/ETH/85/802), Final Report, May 1987.

in 1984, there has also been a significant increase in the production of soft drinks, mineral water, wine and alcoholic liquors. The industry has also strengthened backward linkages to the agricultural sector through the establishment of a maltery. A steady expansion of production in this branch is expected in the future, targeted at the domestic market primarily but also taking advantage of the export opportunities within the region for beer and mineral water and in Europe and North America for wines.

Ambo Mineral Water Factory, managed by EBC, was originally established in the 1930s and then refurbished in 1970. The factory has two bottling lines with a capacity of 30 million 650 cc bottles. Although the source is plentiful the plant operates on a two shift basis owing to technical problems. Another mineral water bottling plant at Babile also dates from before 1940, much of the equipment is old and the factory is in need of a complete overhaul. In spite of the plant deficiencies, output has increased from 139,000 hl in 1978/79 to 244,600 hl in 1985/86 and from 31.3 million bottles in FY1986 to 36.8 million bottles in FY1988. Even so, current production is insufficient to meet local demand. There are plans to expand production at both the Ambo and Babile factories during the FYDP (FY1990- FY1994) and a bottling plant at Kombolcha, with a planned capacity of 14 million bottles, has been included in the indicative list of new projects. Whilst expanding production for the domestic market EBC also has plans to begin exports of Ethiopian mineral water.

One consignment of 120,000 bottles of Ambo mineral water was shipped to Djibouti in FY1985, earning Birr18,000 in foreign exchange. However, owing to the short shelf life of Ambo's carbonated water, the order was not renewed. Improved bottling methods would resolve this problem, but, for the present, EBC has decided to develop exports of flat water instead. A small plastic bottle making plant is to be installed in the Ambo factory and the packaged water will be exported to neighbouring countries. EBC views Djibouti and Saudi Arabia as the two markets with the greatest potential and estimates that exports of one million bottles could be achieved in the medium term. The target for FY1994, determined by the MOI, is for exports of 5.3 million bottles. Penetration of both the Djibouti and Saudi Arabian market will not be easy. Djibouti has recently opened a bottling plant of its own and, while this plant cannot satisfy local demand, the market is already dominated by European mineral water brands. European mineral waters also have a high market profile in Saudi Arabia and to win a market share Ethiopian mineral water will have to compete on price. A marked improvement would also have to be made to the packaging, labelling and presentation of exported mineral water. Since production costs are relatively high in Ethiopia, exports may have to be subsidised if they are to compete effectively. The location of the mineral water bottling plants away from the major port aggravates this problem. Transport costs

within Ethiopia add significantly to the total delivery cost to export markets.

Soft drinks are manufactured by eleven medium and large-scale enterprises, three of which are privately owned and the remainder under EDC supervision. All but two of the publicly owned enterprises were established before 1974. They serve discrete regional markets - Dire Dawa, Asmara and Dessie - and the capital. The range of products is quite narrow and production is dominated by brands made under licence from foreign companies. Output jumped from 264,333 hl in 1978/79 to 710,813 hl in 1979/80 but subsequently levelled out. Within the public sector, however, production has continued to increase, rising from 10.4 million crates in FY1985 to 13.1 million in FY1988. There is no indication that the market is saturated at current levels of production, indeed there is thought to be a considerable unsatisfied demand. One of the biggest problems facing the industry is the poor transport facilities and high freight costs. Consequently, while bottled soft drinks are readily available in the major cities they are still comparatively scarce in the rural districts, where the bulk of the population lives. Production is also constrained by the shortage of bottles and the dependence on imported essence for licensed brands - amounting to 674 tonnes in 1985/86. Production of local brands might be extended profitably. This industry might also benefit from an infusion of private capital through the multiplication of small-scale regional bottling plants.

There are four breweries operating in Ethiopia, all managed by EBC: the Addis Ababa Brewery opened in the 1920's; the Asmara Brewery dating from the 1930s; the Meta Brewery at Sebetta built in the 1960s; and the Harar Brewery completed in 1985 with assistance from the government of Czechoslovakia. Output has increased by 75 per cent in the past decade, rising from 495,500 hl in 1978/79 to 876,700 hl in FY1988. Nevertheless, output has failed to catch up with domestic demand, which has remained strong despite substantial price rises in 1986. EBC plans to increase production significantly during the FYDP. In November 1987, it announced that a fifth brewery would be built at Bedele in Illubabor, with a capacity of 250,000 hl. The brewery, which is expected to cost Birr88 million, is to be financed in part by a long-term credit extended by the government of Czechoslovakia, which will also provide technical assistance and much of the equipment. A sixth brewery has also been included in the indicative list of projects for the FYDP.

Production at the existing breweries is plagued by technical difficulties arising from the age of machinery and shortages of spare parts. At the Harar brewery, for instance, the labelling machine frequently breaks down and production of labels - and so production for export - has to be suspended. There are also acute shortages of bottles. EBC runs two bottle making factories, one in Addis Ababa and the other in Asmara. However, both plants are old

and, though output has tripled from 9 million bottles in 1980/81 to 27.6 million in 1985/86, this is still not enough to meet demand. Virtually all bottles are sold on deposit in Ethiopia and reused many times, consequently their quality is generally poor.

Breweries have also faced problems with the supply and quality of malt. Before the Assela Maltery was completed in 1984, most of the malt used in the breweries had to be imported: in 1983/84 only 20 per cent of the malt used was supplied locally. After the Assela maltery began operations output increase rapidly during the mid-1980s, reaching 11,000 tonnes in FY1988, 110 per cent of nominal installed capacity. When the Assela Maltery attained full capacity in 1987, malt imports stopped. Further increases in domestic malt production capacity are planned for the FYDP period to meet the demand created by expansion of the brewing industry. Capacity at the Assela Maltery will increase by 5,000 tonnes and a new Maltery at Bedele has been included in the indicative list of projects. Unfortunately, the quality of domestically produced malt is generally poor (the protein content is high and the extract low) owing to the low quality of barely supplied by local state farms and cooperatives in Arsi and Bale.

Despite these problems, the MOI has ambitious plans to increase exports to a target of 380,000 l by FY1994. In recent years, EBC has successfully - but not always profitably - exported beer to PDR Yemen, Djibouti and, in small quantities, to Europe and the United States. The volume of exports has fluctuated markedly, falling from 388,000 l in FY1985 to 24,000 l in FY1987 and rising again to 165,000 l in FY1989, when exports generated Birr258,000 in foreign exchange. Djibouti is identified as the market with the greatest potential, though EBC believes it may be possible to expand exports to other countries within the PTA region. If Ethiopian beer is to secure a foothold in these markets, EBC will have to improve the packaging and labelling of beer bottles. It will also have to increase production and the quality of the bottles themselves. Until recently, EBC asked export customers to return bottles because they were in such short supply. This practice is unheard of elsewhere. Since the cost of producing bottles in Ethiopia is approximately 30 per cent higher than those available from foreign suppliers, it may be worthwhile to investigate alternative, disposable packaging materials.

EBC operates three wineries, two in Addis Ababa and one Asmara, and a fourth is under private ownership. Although these wineries are old, dating from the 1950s or before, they have managed to increase output from 71,000 hl in 1978/79 to 103,600 hl in 1985/86 by increasing capacity utilisation. Output has remained at about this level since then. Production is mainly directed at the domestic market, though the Awash Winery, the largest of the four, with a capacity of 15 million 0.8 l bottles per year, has developed some export sales. In FY1985 wine exports amounted to 190,000 l, falling to 26,000 l the following year and then

recovering to 100,000 l in FY1989, when they generated Birr230,000 in foreign exchange. Djibouti and Kenya are the principal export markets, though a substantial quantity was shipped to the USSR in 1984. Sample shipments to Europe, the United States and Tanzania have also been well received. Since the quality is generally good and the production methods meet EEC standards, EBC believes that it could increase its wine exports substantially in the near future. An export target of 890,000 l has been set for FY1994. To achieve this goal, EBC will have to undertake an intensive marketing campaign. Production may also have to be increased. The construction of a completely new winery has been included in the indicative list of projects for the FYDP.

One of the major problems facing the Ethiopian wine industry is the supply of raw materials. Most wine destined for domestic consumption is made from dried raisins imported from Turkey and the Yemen Arab Republic: in 1985/86 imported raisins accounted for over 60 per cent of the wine industry's raw material input. Export wines, on the other hand, are made from locally grown grapes. These cost approximately twice as much as the French equivalent. A reduction in raw material costs would, therefore, help lower the product price. As with the brewing and mineral water bottling industries, wine production is also handicapped by the quality and supply of bottles. The shortage of green tinted bottles is particularly acute.

A range of liquors - araki (pastis), brandy and rum for the most part - is manufactured in eight distilleries and blending plants, two of which also produce industrial alcohol. Three of these are under private ownership and the remainder are operated by EBC. Output of liquor has doubled from 32,000 hl in 1978/79 to 66,800 hl in 1985/86. Most of this has been sold on the domestic market though exports increased during the mid-1980s, reaching 85,000 l in FY1988. In that year liquor exports generated foreign exchange earnings of Birr783,000. Exports are expected to increase to 128,000 l in FY1994.

A cigarette factory was established in Asmara in 1917 and another, in Addis Ababa, began operations in 1942. Both these factories are now operated by the National Tobacco and Matches Corporation (NTMC). Despite the age of much of the machinery, output has doubled from 1,405 million cigarettes in 1978/79 to 2,972 million in FY1988. Production of chewing tobacco and pipe tobacco began in 1979 and output of these products reached 31,000 kg and 352 kg respectively in 1985/86. Per capita consumption of cigarettes is low by African standards and is likely to decline further in the future as health education programmes take effect. Moreover, cigarette production is low on the government's scale of priorities. Only 1.7 per cent of industrial investment under FYDP has been allocated to NTMC and much of this will go towards the expansion of the Bahir Bar Match Factory.

In 1985/86 70 per cent of the leaf tobacco used by the factories was supplied locally, 27 per cent per cent from state farms and the remainder from peasant small-holders. In order to reduce the dependence on imported tobacco, the government planned to double production of tobacco leaves between 1984/85 and 1992/93. Some progress has already been made towards this goal. The volume of tobacco imports has dropped from 1,443 tonnes in 1980/81 to 604 tonnes in 1986/87, saving approximately Birr14 million per year in foreign exchange. Ethiopian cigarettes are mostly sold in the domestic market - a shipment of 5.8 million cigarettes in FY1988 being the only exception in recent years - where local brands hold a dominant market share by virtue of their low price. Imports are heavily taxed and most of the imported brands available are thought to have been smuggled into Ethiopia.

3.2 Textiles and garment manufacture

The foundations of Ethiopia's textile industry were established at an early stage of the country's industrialisation. During the 1950s and early 1960s substantial investments were made in textile mills which drew their raw materials from local cotton plantations and sold to the domestic market. By the late 1970s these mills accounted for over three-quarters of the total production value in the branch. Garments were manufactured by small and medium scale enterprises. Again the market was domestic. Diversification of Ethiopia's industrial base reduced the textile branch's share of manufacturing value added from 41 per cent in 1962 to 29 per cent in 1975. Although the branch achieved an average annual growth rate of 5.6 per cent for production value from 1978/79 to 1986/87, its contribution to total output had fallen to 20 per cent by 1985/86 and it had been overtaken by the food processing branch as the leading sector. However, the textile branch continues to dominate the MOI supervised industries in terms of value added (25.1 per cent) and the size of its workforce (42.3 per cent of permanent employees).

During the 1980s, the National Textile Corporation (NTC) increased output by expanding the capacity of existing textile mills and the construction of a large new fabric mill at Kombolcha. There was some diversification into the manufacture of garments and knitwear but the share of textile mills in gross production value only dropped from 76.4 per cent to 68.7 per cent over this period. The structure of investment in the FY1990-FY1994 period is likely to reinforce the position of the textile mills within the sector in the coming decade.

Nevertheless, the orientation of the textile sector has changed somewhat since 1985. While the industry's primary role remains the satisfaction of domestic demand for basic consumer goods, greater attention has been paid to the opportunities for exports. Export sales increased eightfold from Birr2.2 in FY1985 to Birr19.8 million in FY1989. Although only a small proportion of total production is exported (2.5 per cent in FY1988) the sector is expected to make a much greater contribution to manufactured exports in the next few years. The MOI has set an export target of Birr79 million for FY1994 and the sector's share of total manufactured exports is expected to increase from 11.4 per cent in FY1989 to 23.1 per cent in FY1994. This ambitious target will be realized by the development of export oriented products and upgrading the quality of those currently produced for the domestic market. In this way awareness of export markets is expected to bring benefits to the domestic consumer.

The National Textiles Corporation (NTC) operates seven textile mills manufacturing cotton yarn, cotton fabrics and fabrics of a cotton-synthetic mix. All but one of the NTC mills - the Kombolcha Textile Mill commissioned in 1986 - were established in the 1960s

or before. The Dire Dawa Textile Mill, the oldest, dates from 1938. Several enterprises have benefited from the installation of new machinery in recent years - Adei Ababa No 2 and Dire Dawa No 1 - but otherwise much of the machinery is obsolete and in need of costly refurbishment. The low efficiency of installed plant is aggravated by poor maintenance and a shortage of spare parts, many of which have to be tailor made.

A sectoral survey in 1986 revealed that labour productivity is extremely low^{15/}. Productivity in spinning operations was calculated as 5.26 kg per operator hour and weaving productivity was calculated as 15,000 to 19,000 picks per operator hour, 68 per cent and 76 per cent below European standards respectively. Inefficient machinery reduces labour productivity. So does overstaffing. The sectoral survey argued that staffing levels were "significantly above" the expected level. This may be set against the social benefit of employment opportunities for female workers but overstaffing inevitably has an economic cost. Paradoxically, production is also impaired by high levels of absenteeism. The shortage of skilled workers also presents a problem, though little systematic training is offered on the factory floor.

Cotton mills also have difficulties acquiring raw materials, not because of deficiencies in the agricultural sector (see Section 5.2) but because of problems of co-ordination. Some mills - Asmara Textile Mill for instance - manage their own plantations which assure more regular supplies, but others have had to interrupt production because of the late delivery of cotton lint. A small proportion of cotton lint used is imported (3.5 per cent in 1985/86), but the industry is entirely dependent on imported nylon and imports of acrylic yarn amounted to 2,000 tonnes in 1985/86. Thus production of cotton-synthetic mix fabrics is affected by reduced supplies of inputs during times of foreign exchange constraint. Unreliable power supplies have also caused production stoppages, particularly in Asmara and Dire Dawa.

Given the constraints facing the textiles mills, their poor production and financial performance is hardly surprising. While gross production value of yarns and fabrics has increased by 39 per cent over a nine year period, from Birr200.4 million in FY1979 to Birr279.6, gross output has stagnated. Output of cotton yarn increased from 7,850 tons in 1978/79 to 9,405 tons in 1984/85, when the Kombolcha Textile Mill became operational, and subsequently increased to a peak of 11,100 tons in FY1988 before falling back to 10,400 tons in FY1988. Production of cotton fabrics has also fluctuated over this period, dropping from 88 million sq ft to 71.5 million sq ft in 1985/86 and then recovering to 95 million in

15. Werner International Consultants, Final Report on the Establishment of a National Textile Centre, June 1988.

FY1988. Output of nylon woven fabrics has remained fairly stable at around 5.8 million sq ft over the ten year period.

Poor quality is another consequence of the mills obsolete machinery and poorly trained staff. Yarns have a high nep content and are generally uneven. Their strength is achieved through high twist levels at the expense of elasticity. Shade variations are common in fabrics. Only in the new Kombolcha Mill and those that have recently been renovated are systematic quality control measures implemented. It is generally accepted that, at present, the quality of Ethiopian fabrics is not suitable for the export market. Neither is the price. Ethiopia's textile mills are penalised by the high cost of local cotton - currently about 35 per cent above the import parity price - while low levels of productivity in the yarn mills compound the disparity in prices between domestically produced and imported fabrics.

Owing to the stagnation of output, the government has had to import large quantities of textiles and garments to meet increased domestic demand. Textile imports averaged Bir65 million over the 1981/82 to 1986/87 period. Even so, a large proportion of the demand for fabrics is not satisfied. There are frequently shortages of such products as sheeting. Output of other products (towels, for instance) exceeds demand and stocks build up which EDDC has to clear at cut-down prices or by conditional sales to traders. Liaison between EDDC - the state organisation that markets about 90 per cent of the textiles sold in the domestic market - and NTC is ineffective. NTC managers complain that they are given no feedback on market conditions. EDDC retorts that the mills do not implement their recommendations. Neither EDDC or NTC undertake market research or forecasting to assess the structure of current and future demand. Without such research and more detailed planning at both a sectoral and plant level the problem of inefficient resource allocation - coexistence of shortages and excess production - will continue.

NTC has embarked on ambitious expansion plan which involves the investment of Birr548.6 million in the rehabilitation of existing capacity and the construction of new mills over the FYDP (FY1990-FY1994) period. In mid-1989, renovation work was under way at the Bahr Dar Textile Mill in Gojjam. Refurbishment, partly financed by loans from the EIB and World Bank, was scheduled for completion at the end of 1989. A second stage is planned in which production capacity at the mill will be increased from 20 million sq m to 35 million sq m. This is expected to cost a further Birr104 million. Rehabilitation work is also under way at the Idget Yarn Factory in Addis Ababa. This should increase capacity by 740 tonnes of yarn per year. Two other rehabilitation and expansion projects are planned. NTC is currently promoting finance for rehabilitation work at the Akaki Textile Mill with a total investment of Birr53 million. The project would increase fabric production by 10 million sq m. The Dire Dawa Textile, Ethiopia's

oldest mill, is also scheduled for rehabilitation. It is hoped to expand capacity by 15 per cent to 36.8 million sq m.

Meanwhile, two completely new textile mills are under construction. The largest of these, the Arba Minch Textile Mill in Gama Gofa, will cost a total of Birr180 million. It will generate 1,400 jobs in a region that has very little industrial activity at present and has a planned capacity of 25 million sq m of fabric per year and 370 tonnes of yarn. The second new mill is being built at Awassa in Sidamo, another rural area. It will generate 1,520 new jobs. The mill's planned capacity of 11.1 million sq m of woven fabric and 36.1 million sq m of fabric finishing.

Blankets are virtually the only product manufactured out of wool. These are produced by the Debre Behan Blanket Factory, originally established in 1962 but refurbished in 1979. Wool is purchased locally and mixed with imported waste wool. Cotton blankets, made from waste cotton, are also produced by the Akaki Textile Mill and the Adei Ababa Mill in Addis Ababa. Output of both these products expanded rapidly in the early 1980s, immediately after the Debre Behan factory was refurbished, rising from 300,700 woollen blankets and 386,300 cotton blankets to 620,000 woollen and 612,000 cotton blankets in 1983/84. Since then production has remained fairly stable and the factory has worked at near full capacity. At present, however, the factory only supplies about one third of the domestic market. Work is currently under way to double production at Debre Behan and there are plans to increase capacity at the other factories by 1.4 million pieces per year. A new blanket factory with a capacity of 1.2 million blankets has also been considered. This would be built in Wollo, an area with little industrial activity at present and potentially plentiful supplies of wool. The Debre Behan factory also manufactures carpets from a woven wool and synthetic mixture. Output of this product, which is destined for the domestic market, has increased 15,600 sq m in 1978/79 to 32,000 sq m in FY1988.

The Nefas Silk Thread Factory, managed by NTC, is the only factory manufacturing silk thread for sewing. Output is insufficient to meet the demands of Ethiopia's rapidly expanding garment industry and a new plant with a capacity of 300 tpa is to be built.

NTC operates three factories manufacturing fibre products; hessian sacks, rope and twine. Sisal is supplied locally, mostly by small-scale farmers, while about 95 per cent of the jute used is imported (9,740 tonnes in 1985/86). Gunny bags are widely used as a packaging material in Ethiopia and demand has long outstripped supply, even though production has increased from 7.9 million bags in 1978/79 to 14.3 million in FY1988. Existing facilities are now operating at near full capacity. In order to ensure adequate supplies in the future, the MOI plans to increase production of fibre products and establish a polythene bag manufacturing

facility. Increased production of polythene bags will enable NTC to package its finished products properly: at present, textiles and garments are usually packaged directly in gunny bags without any protective covering. As a result the contents are often soiled or stained when they arrive at retail outlets. Both the Addis Ababa and Asmara Fibre Mills to be rehabilitated in order to increase production by 1,200 and 2,400 tpa of sacks respectively and a fourth sack factory with a capacity of 4 million sacks per year is planned. A facility for production of industrial canvas might also be established.

Until recently, industrial production of finished garments was dominated by the manufacture of knitwear (underwear, sweaters, blouses and T-shirts). NTC manages two knitwear factories manufacturing a range of hosiery products and a sweater factory, all of which were established before 1974. Output of hosiery products from these factories has fluctuated markedly in recent years - averaging 480,000 dozen items over the period 1978/79 to 1985/8, reaching a peak of 632,000 dozen items in 1983/84 - both because production constraints and inadequate co-ordination between production and marketing.

The Eritrea Textile Factory in Asmara is handicapped by obsolete machinery, unreliable power supplies and delays in the arrival of raw materials. A recent study of the textile sector revealed that the plant actually generates negative value added at border prices. In terms of its Domestic Resource Cost (DRC) it is the least efficient of the NTC factories. The Asmara Sweater Factory faces similar problems. In addition, the sweater factory has had marketing difficulties. Formerly, virtually all the factory's output was sold to EDDC which distributed the products to retail outlets. This meant that the factory management had no contact with customers. EDDC should have provided feedback on sales performance, but lengthy delays in the delivery of sales statistics led to excess production of some product lines. EDDC should also have advised the management on the design of its products so that they could keep abreast of changes in fashion. Little was done on this front. As a result, sales performance deteriorated steadily and dead stock built up. In 1987 NTC negotiated a new distribution contract with EDDC allowing the factories to distribute their own knitwear products through four retail outlets. Sales performance improved thereafter.

Small-scale private sector enterprises have managed to step into NTC's "fashion gap" by producing sweaters and other knitted products that are closer to market requirements. They produce small batches of copied imported items which are sold directly to retailers. Of necessity they are far more versatile than the Asmara Sweater Factory, their prices are also lower and the quality is higher. In 1985/86 the 21 private sector knitwear factories accounted for 37 per cent of the gross production value of knitwear and 23 per cent of the value added generated by this sub-branch.

EDDC has recommended that the production of knitwear should be left to private sector enterprises.

NTC also operates two garment assembly plants producing shirts, trousers and shorts and a garment manufacturing facility at the Akaki Garment Factory which produces military uniforms. The Addis Garment Factory was nationalised in 1978 and expanded in 1984 and the Gullele Garment Factory was commissioned in 1985. Output increased rapidly after these facilities were built, rising from 2.4 million items in FY1985 to 6.4 million items in FY1988.

Formerly, garment manufacture was the preserve of small-scale private sector enterprises. In 1985/87 seven of these enterprises were identified in the CSA manufacturing survey though this number excludes the hundreds of tailoring workshops manufacturing clothing items for both the ready-made and fitted clothing markets. Although the survey suggests that the private sector only contributes 7 per cent of gross production value, this certainly underestimates its importance. Further expansion of private sector activity in this sub-sector can be expected in the new market oriented policy environment, perhaps even at the expense of public sector enterprises, since production costs are thought to be lower in the private sector. Opportunities in export markets could give additional impetus to private sector investment.

The textile and garment manufacturing industry has developed along the lines of import substitution. Up to 1985, the government gave little attention to the industry's export potential because the domestic demand for textile products exceeded supply. Since 1985, however, the expansion of exports has become a priority. NTC's export sales increased from Birr822,000 in FY1982 to Birr2.5 million in FY1985 and then jumped to Birr13.5 million in FY1988 and Birr19.8 million in FY1989. Knitwear and woven shirts are the main export products, accounting for 51.4 and 27.9 per cent of export sales respectively over the FY1985 to FY1988 period. Exports of fabric have a shorter track record. The first shipment of 334,000 sq m was exported in FY1986. In FY1988 fabric exports increased to 779,000 sq m and to 3.7 million sq m the following year, when fabric exports accounted for 18.5 per cent of total export earnings. Other textile exports are cotton waste, primarily to Tunisia, which accounted for 9.4 per cent of export earnings from FY1985 to FY1988, and cotton yarn, 3.4 per cent.

Because production costs are high in Ethiopia's public sector enterprises and export prices are significantly lower than those in the domestic market (220 per cent higher in the case of cotton shirts and 185 per cent higher for T-shirts) exports have had to be subsidised. These subsidies could be eliminated by reduction in staffing levels and upgrading production and management methods. Lower production costs would also benefit domestic consumers. While NTC is under pressure to maximise its export earnings - apparently at whatever cost to the enterprises - research should

be undertaken to identify those products which it can produce most competitively and the Corporation should then specialise.

Although the prevalence of subsidies makes it virtually impossible to assess comparative advantage, a prima fasciae case can be made for the greater efficiency of garment assembly operations on the grounds of Ethiopia's low labour costs in a labour intensive industry. Yarns and grey fabrics offer the greatest export potential for increased exports from Ethiopia's textile mills. As finishing techniques and quality control procedures improve in the long-term, NTC may be able to diversify into the export of dyed and printed cloth. NTC could also increase its earnings by raising prices through a more aggressive marketing strategy. Recognising its inexperience in the international market, NTC signed a seven year distribution agreement with an Italian company in 1985 to market products in Europe and the USA up to a value of Birr30 million. Since then NTC has been a price taker. Higher prices could be achieved through direct sales to large retail outlets.

Trade in textiles and garments is intensely competitive. However, Ethiopia has two great advantages over many other exporters. Firstly, wage levels are lower in Ethiopia than virtually any other LDC. Labour costs per shirt equivalent are thought to be about one quarter of those prevailing in Hong Kong, taking into account significantly lower productivity levels. Secondly, Ethiopia's LDC status under the Lome Convention allows duty and quota free entry for Ethiopian textiles and garments products into the European market. NTC already has market exposure in Europe. Since FY1985, about 75 per cent of Ethiopia's textiles and garment exports have been sold in Italy. NTC has also exported to the United Kingdom and France.

Low labour costs could attract foreign investment to the garment manufacturing sector. Quota restrictions in the European and North American markets have forced manufacturers in the Far East to establish garment assembly facilities in LDCs - notably Mauritius and the Caribbean states. Rising labour costs in the Far East have been an additional incentive for the relocation of assembly operations. Such investment usually takes place within the framework of an duty free export processing zone. A similar duty free regime is under consideration in Ethiopia (see Section 4.3). Garment assembly operations are footloose. They require little investment and so are able to take advantage of the lowest labour costs where labour is of sufficient quality. Linkages to the domestic textile sector may be limited, particularly where the quality of locally available inputs is poor or uneven, but such investments would provide potential for vertical integration even if the fabrics initially have to be imported. In the short-term, the principal benefits they would bring to the economy would be the expansion of export earnings and employment opportunities.

3.3 Leather processing and products

Ethiopia has one of the largest livestock populations per capita in the whole of Africa (see section 5.2) and a long tradition of leather working. By building on these resources and taking advantage of a structural change within the leather industry at an international scale, Ethiopia's leather industry has been able to achieve rapid growth rates in recent years, averaging an 11.8 per cent per annum increase in the gross value of production over the period FY1979 to FY1988. The growth in the international trade in processed and semi-processed leather has favoured the expansion of tanning and processing facilities in particular. Production of tanned leather increased at an average annual rate of 12.3 per cent at constant prices over the ten year period. By 1985/86 nearly 73 per cent of the gross output of Ethiopia tanneries was exported. Production of leather products, including footwear, has grown at a slower, but still impressive, annual growth rate of 9.6 per cent. The export performance of leather products has been weaker than that of semi-processed and processed leather - over the period FY1984 to FY1989 96 per cent of leather exports were in the form of semi-processed and processed skins and hides - but there are indications that this sector could expand rapidly in the near future.

The leather industry's importance lies in its contribution to exports rather than employment or total output. In FY1988, the industry accounted for only 9.3 per cent of the gross production value of MOI supervised enterprises but 68.3 per cent of exports. Future developments will seek to increase the industry's export potential by expanding output and gradually moving towards higher levels of processing, whilst still satisfying the domestic demand for finished leather goods and footwear.

National Leather and Shoe Corporation (NLSC) currently operates eight tanneries, all of which were established before 1974. There are also two small-scale private tanneries - one in Asmara, the other in Addis Ababa - but they account for only 2 per cent of the gross production value of processed and finished leather. In 1986, the total processing capacity of NLSC operated tanneries was estimated at 8.7 million skins and 21.6 million sq ft of hides. At that date capacity utilisation rates were 90 per cent in the case of skins, but only 30 per cent for hides.

Obsolete equipment and lack of spare parts, explain, in part, the low capacity utilisation rates at the hide tanneries. Far more important, however, are shortages of raw materials. Livestock smuggling to Djibouti and the retention of skins and hides in rural areas for domestic use, reduce the supply available for purchase by dealers working on behalf of tanneries and the output of public abattoirs (see Section 5.2). The tanneries have also faced stiff competition from dealers in raw hides and skins. In the mid-1970s 70 per cent of hides and skins reaching the market were exported

unprocessed. A broader network of tannery dealers and the government's policy of discouraging exports of raw hides in order to maximise the value added helped reduce the share of raw hides and skins in total exports of hides and skins from 91 per cent in 1977 to 51 per cent in 1984. The government hoped to phase out exports of raw hides and skins altogether by 1987. Unfortunately, export statistics are not available to assess whether this target has been achieved.

Skin and hide quality is also a major problem. Animal disease, careless skinning and handling in the abattoirs causes defects which lower skin value. So too does the practice of storing raw hides in the open. This facilitates bacterial growth which reduces the grain quality. Dependence on imported chemicals has been reduced (from 5,300 tonnes in 1983/84 to 3,351 tonnes in 1985/86) by stepping up domestic production (from 941 tonnes in 1983/84 to 6,477 tonnes in 1985/86). However, production in the private sector continues to be constrained by shortages of chemicals because allocations favour the publicly owned tanneries.

Despite these constraints, output of semi-processed skins increased by 93 per cent from 1980/81 to 9.4 million skins in FY1988, while output of semi-processed hides increased by 251 per cent to 7.9 million sq ft over the same period. The growth of gross production value in the tannery sector has been equally impressive with a 191 per cent increase recorded in nine years: rising from Birr30.3 million in 1978/79 to Birr88.1 million in 1986/87 at constant 1978/79 prices. Efforts have also been made to increase the degree of processing, moving from wet blue skins and hides to much higher value crust and from crusts to finished leather. However, development of facilities for the later stages of processing has not kept pace with the expansion of semi-processed skin and hide production. Output of finished leather increased by only 32.2 per cent from FY1981 to 13.3 million sq ft in FY1988.

The rapid expansion of leather processing has been made possible by the growth of export sales and, to a lesser extent, increased domestic consumption: by 1985/86 72.8 per cent of tannery sales were exported. In recent years, environmental legislation in Europe and the USA has forced many tanneries to close, leading to increased demand for semi-processed and processed skins and hides from LDCs. Ethiopia has taken advantage of this structural change in world manufacturing. While this has certainly benefitted the Ethiopian economy, Europe's leather industry has, in effect, transferred the environmentally destructive stage of leather working to a low income country which lacks the means to take adequate steps to protect its environment whilst retaining the high value-added leather finishing and products activities. In the long-term, Ethiopia may be able to expand its exports of finished leather articles to take full advantage of its position as a leather exporter. In the short term, however, the NLSC urgently needs assistance in the development of effluent treatment

facilities - assistance that will not entail high capital expenditures and so increase the cost of the finished product. Technical assistance may help Ethiopia develop appropriate technologies but capital assistance should also be considered.

Exports of semi-processed and processed skins increased from 4.1 million pieces in 1978/79 to 6.5 million in FY1984 and 9.8 million in FY1988; exports of semi-processed and processed hides rose from 4.8 million sq ft to 6.6 million over the same period. There is some indication that the degree of processing of exported skins has also increased. The proportion of wet blue skins in total exports by volume rose from 35 per cent in FY1984 to 60 per cent in FY1988, though exports of crust skins remained relatively stable over this five year period. Preliminary results for FY1989 indicate that the proportion of crust skins in exports rose to 37 per cent from 5 per cent the year before. Exports of crust hides, on the other hand, have tended to fluctuate around 50 per cent of total exports by volume.

Processed and semi-processed hides and skins accounted for about 95 per cent of the total value of leather and leather products exports over the period FY1984-FY1989 (Table 3.0). Exports of finished leather (garment leather, lining leather, and upper leather) are still relatively unimportant.

NLSC plans to increase the output of hides and skins during the FYDP (FY1990-FY1994) period by removing bottlenecks and expanding capacity at existing tanneries. Expansion projects at three of the tanneries have been allocated three quarters of planned investment for the five year period. Construction work is currently under way at the Ethiopian Tannery (Edjersa) where capacity will be increased to 142,500 hides and 1.14 million skins per year. The MOI is trying to secure funding for rehabilitation and expansion work at the Modjo Tannery which will raise capacity by 750,000 skins per year and for a new sheepskin tannery, to be located at Alemgena (Addis Ababa). Two other projects are under appraisal: a hide tannery with a capacity of 430,00 sq ft and a goat skin factory with a capacity of 1.5 million skins. Given the export potential of the tannery sub-sector these projects may attract foreign investment. This would provide an infusion of capital and technology, presently the most important constraints on increased output. As processing capacity increases, in the long term, stock levels and herd take-off rates will determine the production ceiling.

Table 3.1: Exports of Leather and Leather products, FY1984 to FY1989
(Thousand Birr)

Product	1984	1985	1986	1987	1988	1989	Percent 1985-89
Processed skins	59,979	48,682	44,180	87,219	103,603	96,110	86.0
Processed hides	7,836	8,379	5,674	9,329	9,444	13,518	10.6
Finished leather	252	1	1,130	562	1,164	...	.7
Leather products	563	127	264	1,352	4,263	7,525	2.8
Total	68,630	57,189	51,248	98,462	118,474	117,153	100.0
as % of total manufactured exports	72.8	63.9	57.9	70.9	68.5	67.6	

Source: Data provided by the Ministry of Industry.

Production of leather shoes and articles is oriented towards the domestic market rather than export sales. NLSC operates five leather shoe factories, originally established in the 1940 and 1960s, and a factory manufacturing a wide range of leather articles (leather garments, upholstery, bags and brief cases, wallets and purses, and footballs) was established with technical assistance from the government of Hungary in 1984. There are also 24 medium-scale private sector leather workshops, the largest employing 100 workers (in contrast, the smallest of the NLSC factories employs over 300 workers). These manufacture shoes for the most part, but are now experimenting with a wider range of leather products.

In the early 1980s, the shoe and leather products sub-sector was characterised by low labour productivity (one third of the international level), largely a result of inadequate staff training, inefficient working methods and inefficient machinery for cutting, toe lasting and stitching. Furthermore, having developed along the lines of substitution within a protected market, the factories have been able to expand production without giving much attention to design. As a result, EDDC has had great difficulty selling some of its products and, at the upper end of the market, has faced competition from imported (often smuggled) shoes.

NLSC implemented a new development strategy in 1984, with technical assistance from UNIDO (DP/ETH/78/001), which brought about significant improvements in labour productivity in some of the NLSC factories - Tikur Abbey Shoe Factory, for instance - by introducing a productivity and quality related bonus scheme. Production methods and management have been upgraded and new designs for higher quality shoes prepared. After a period of stagnation in the early 1980s (output of shoes and boots from NLSC factories increased by only 7.6 per cent from FY1981 to FY1985), the sectoral plan facilitated rapid growth at a sub-sectoral level. By FY1988, output of leather shoes and boots had increased to 2.3 million pairs, 71 per cent above the level of FY1980, and a range of new leather articles had been brought onto the market.

The market for footwear in Ethiopia, is dominated canvas and plastic footwear, holding 30 and 50 per cent of the market shares respectively, whereas leather footwear accounts for only 20 per cent. Two plants operated by NLSC manufacture composite canvas and rubber footwear, one of which also manufactures plastic shoes. There are also two private sector enterprises engaged in the manufacture of plastic shoes. Output of canvas and rubber footwear has remained relatively stable in recent years, rising from 2.3 million pairs in 1978/79 to 2.7 million in 1985/86. Production of plastic shoes, on the other hand, has increased from 1.7 million pairs to 4.6 million pairs over the same period. The relatively low price of plastic footwear explains its strong market position. Unfortunately, the quality is rather poor. This problem should be

addressed by the implementation of more rigorous quality control procedures.

Exports of leather shoes are handicapped by poor design and high production costs, even though the shoes are generally well manufactured. Recently NLSC has managed to export limited quantities of leather footwear (56,000 pairs over the FY1984 to FY1989 period) to Yemen, Djibouti and Saudi Arabia, but, at present, there is little prospect of NLSC breaking into fashion conscious European and North American markets. Neighbouring African countries have greater potential, particularly for heavy industrial and military boots. NLSC has had greater success in the export of shoe uppers for assembly abroad. Exports of shoe uppers increased steadily from 9,000 pairs in FY1985 to 70,000 pairs in FY1988 and then jumped to 1.1 million pairs in FY1989. This suggests that NLSC has now established a presence in this market and exports can be expected to increase in the future. The international market for leather articles has proved more difficult to penetrate.

The Universal Leather Articles Factory was set up in 1984 specifically to develop export sales of leather articles. Machinery was imported from Europe and designs were copied from foreign catalogues. Owing to the price of the factory's products (about 30 per cent higher than other producers) and the management's lack of export experience, the factory found great difficulty in finding buyers. A small quantity of briefcases and handbags, worth Birr 873,000, were exported in FY1987 and sales increased to Birr3.4 million the following year. Exports sales slumped to Birr2.6 million the following year; less than one quarter of the export target set in 1984. In light of the factory's recent performance the MOI target for FY1994 - Birr23.4 million - appears extremely ambitious.

During the FYDP (FY1990-FY1994), NLSC plans to expand capacity and upgrade production at existing shoe factories with a view to developing a stronger export performance. The MOI is also investigating a project for a new plant producing ladies' shoes and training shoes with a capacity of 1.5 million pairs of each per year. For some years now, the Ethiopian Sports Commission has asked NLSC to begin production of sports footwear. This plant would also have export potential since the market for leather sportswear is strong, though fashion linked. Increased production of plastic footwear is also under consideration.

3.5 Wood processing and products

The wood processing and products branch is extremely decentralised. In 1985/86 there were 31 medium and large-scale enterprises engaged in wood processing and the manufacture of wood products, twelve of which were under public sector management. Since 1984, when the Ethiopian Wood Works Corporation was dissolved, these enterprises have been managed by the Ministry of Construction and the National Metal Works Corporation. In addition, the Ministry of Agriculture operated 15 saw mills in the forest regions, the Ministry of Education ran its own workshop producing school furniture and there are large number of small scale-scale joinery and carpentry workshops. Tighter control of the wood products industry through the formulation of a sectoral plan would greatly assist the rationalisation of production. Given the pressure on forestry resources, this would be desirable both from and environmental and an economic point of view.

Nominal installed saw mill capacity was estimated at 220,000 cu m per year in the early 1980s. Most of the saw mills are more than twenty years old, the machinery is obsolete, and there are shortages of spare parts, such as blades. These problems, together with dwindling supplies of wood in recent years (see Section 5.2), have forced many mills to close. Output of finished timber has steadily fallen from 41,100 cu m in 1978/79 to a mere 4,400 cu m in 1985/86, most of which was used in the construction industry. Total consumption of timber in the wood and wood products industry has also fallen; from 47,000 cu m in 1983/84 to 35,500 cu m in 1985/86.

Plywood and particle board factories are a major consumer of timber. The Ministry of Construction operates two plywood factories, one in Addis Ababa, the other in Jimma. Their nominal installed capacity was 6,300 cu m per year in the early 1980s but production has been well below this level since 1978/79, due to obsolete machinery, shortages of spare parts, logs and skilled manpower. Both plants were rehabilitated in the mid-1980s but output did not increase significantly thereafter. In 1985/86 output reached 2,900 cu m, the highest level for three years. This covered only 40 per cent of domestic demand. In 1985, the Ministry of Construction planned to build a new plywood factory with a capacity of 10,000 cu m per year near Jimma to meet growing demand, which was expected to reach 12,860 cu m per year by 1995. It is not known whether this plant has been established. Output of particle board increased from 2,200 cu m in 1978/79 to 10,100 cu m in 1985/86, largely as the result of the introduction of a production line for cement bonded particle board at the ETHARSO plant in 1983. Hard particle board is widely used in the construction industry, while veneered chipboard is used in furniture manufacture. About one third one the veneer used is imported.

Two plants manufacture joinery and building components on a large scale: ECAFCO, which produces prefabricated particle board housing and has a capacity of about 11,000 sq m of floor area per year; and the Wanza Factory which produces small wooden houses, door and window frames. The National Metalworks Corporation manages seven furniture manufacturing plants which use a mixture of timber, particle board and metal. The quality of the products and design is sometimes poor, both because of the poor quality of the materials available and the shortage of skilled carpenters. Output of furniture, produced by the NMC, fell from 80,800 pieces in FY1985 to 71,500 pieces in FY1988, though this takes no account of the composition of production. Small-scale private sector workshops generally manufacture more fashionable products, better suited to household use. No details of output are available, but production value (at market prices) has increased from Birr8 million in 1979/80 to Birr19 million in 1985/86.

3.6 Paper and printing

Total paper consumption in Ethiopia is currently about 26,000 tonnes per year, about half of which is supplied by domestic producers. Total production of duplicating, typing, printing and writing paper and cartons increased from 10,300 tonnes in FY1985 to 11,200 tonnes in FY1987, but subsequently fell by 20 per cent in FY1988 owing to a reduction pulp imports. Imports of paper and paper products - amounting to 11,517 tonnes in 1986/87 costing Birr23 million in foreign exchange - make up the balance. Imports of finished paper are also restricted by the shortage of foreign exchange. Consequently, there are frequently shortages. Per capita paper consumption is only 0.8 kg, one of the lowest levels in Africa. As the education system grows and the economy develops it is expected that consumption of stationary books and industrial paper is expected to increase at the rate of 10 per cent per year during the early 1990s.

Since there are no pulp production facilities in Ethiopia, the two paper mills use imported pulp from Europe and waste paper. The largest mill, the Ethiopian Pulp and Paper Share Company (EPPSC), in Wonji, was established in 1955. It has been working at virtually full capacity, 10,000 tpa, since 1984 and holds 36 per cent market share. Approximately 80 per cent of output is printing and writing paper, 10 per cent linerboard and wrapping paper and 10 per cent packaging board. The plant is currently undergoing rehabilitation in order to increase production capacity to 16,000 tpa and there are plans to install a second paper machine with a capacity of 40,000 tpa of newsprint, printing and writing papers, scheduled to begin operations in 1991.

One of the difficulties the plant faces at present is the cost of imported pulp. Because of the shortage of foreign exchange imports of pulp fluctuated from 4,600 tonnes to 11,900 tonnes over the period 1984 to 1987. In order to reduce dependence on imports

the EPPSC plans to construct a 22,000 tpa capacity bagasse pulp mill, using bagasse from nearby sugar factories. The bagasse pulp mill will be commissioned in 1992. EPC also has plans to establish a small pulp wood plantation during the FYDP.

A 150 tpa capacity paper making unit at Asmara was opened in 1946, it is operated by the Asmara Match and Candle Factory. The unit manufactures wrapping paper and packaging board used by the match and candle factory and sold to local enterprises. Waste paper from local printing presses is the principal source of raw materials, supplemented, occasionally, by reeds. Obsolete plant and unreliable water and electricity supplies are the main constraints on production.

In order to meet the growing demand for school exercise books, a factory with a capacity of 133 million books per year is under construction in Addis Ababa. This will increase the demand for cut paper considerably, much of which may have to be met from imports. EPC also plans to build a new paper carton manufacturing facility. Whilst there is a need for increased output of packaging materials, the quality also has to be improved and production of tailor made packaging materials for the needs of each enterprises stepped up. As yet little progress has been made on these fronts.

There were 10 publicly owned printing presses operating in 1987, together with 35 privately owned presses and 17 operating in-house, attached to government departments. The average age of the printing presses in operation is over thirty years old, much of the equipment is obsolete and there are acute shortages of spare parts. Maintenance is a major problem. So too is the purchase of paper and chemicals, since most of the latter has to be imported. Details of output are not available, but statistics on production value, which has tripled from Birr15 million in 1975/76 to Birr67 million in 1987/88, indicate that the output has increased substantially despite these constraints. No significant increase in printing capacity is planned for the FYDP. Instead, EPC plans to rationalise production by the development of a sectoral plan and the centralisation of services such as maintenance and training. This will, it is hoped, improve currently low levels of capacity utilisation.

3.7 Chemical products

Over the past fifty years the chemical products branch has developed along the lines of import substitution through the establishment of enterprises producing a range of final goods. As a result there are few vertical linkages within the chemicals branch and in 1985/86 over 80 per cent of the inputs used were imported (see Section 2.7). In terms of production value, the branch has performed well in recent years - its share of total production value has increased from 5.6 percent in 1980/81 to 12 per cent in 1985/86 - but the structure of production remained

unchanged. The TYPP (FY1985-FY1994) sought to strengthen the chemical products branch by allocating 22.2 per cent of total investment in the industrial sector to new chemical industry projects. It envisaged that the branch's share of gross production value would rise from 10.1 per cent in FY1984 to 25.5 per cent in FY1994. This was to be achieved by increasing output of import substitution final goods and, more importantly, the establishment of facilities for the production of basic chemicals and intermediate goods. Little progress had been made towards these goals by 1989. However, under the FYDP (FY1990-FY1994), priority has been given to the installation of new plants producing basic chemicals (caustic soda, aluminium sulphate and alkyd resins) which will strengthen vertical linkages within the industrial sector and intermediate products for use in agriculture (fertilisers, pesticides and irrigation pipes).

At present, the only basic chemical industries in Ethiopia are the oil refinery, industrial gas manufacturing plants and salt works (see Section 5.5). About 70 percent of domestic petroleum products requirements are met by the output of the Assab oil refinery (managed by the Ethiopian Petroleum Corporation, under the Ministry of Mines and Energy), which uses imported crude oil. In 1981 the refinery's capacity was increased from 650,000 to 800,000 tonnes per year but the basic fabric is now over twenty years old and in need of refurbishment. Because it uses a simple hydro-skimming process the refinery produces a large proportion of heavy fuel oil and relatively small quantities of light and medium oil fractions (Table 3.2). Excess production of heavy oil, amounting to around 180,000 tons in the mid-1980s, is exported for sale at low prices on a saturated world market (see Table A-2). Meanwhile, the balance of light oil products, amounting to about 150,000 tonnes, has to be imported. Redevelopment of the Assab refinery and installation of thermal cracking facilities may be a solution. This would result in increased production of household fuels, LPG and kerosene, which are currently in short supply, and thereby relieve pressure on the urban market for biomass fuels. It would also allow the production of small quantities of basic petrochemicals. In the meantime, the government has set up a joint venture with four Western oil companies to establish and manage a 15,000 tonnes per annum oil refinery near Addis Ababa.

Table 3.2: Domestic refining of petroleum products, 1982 to 1986
(Thousand Metric Tons)

Product	1982	1984	1985	1986	1987	Per cent
						1982-87
Gasoline	101.7	104.7	101.0	99.5	120.7	15.3
Jet fuel	48.0	51.4	56.2	48.8	52.9	7.6
Fuel oil	276.5	310.9	307.2	307.0	338.7	44.8
Asphalt	15.6	16.4	7.1	11.3	14.1	1.9
Petroleum gas	4.8	5.4	5.2	5.3	5.2	0.8
Gas oil	191.4	212.4	190.3	179.0	212.9	28.8
Others	0.0	5.4	9.2	8.1	14.2	0.9
Total	638.0	706.6	676.1	659.0	760.5	100.0

Source: National Bank of Ethiopia, Quarterly Bulletin, various issues.

EBC operates a plant manufacturing carbon dioxide for the beverage industry in Addis Ababa and another plant operated by NCC manufactures oxygen and acetylene. Production of carbon dioxide has increased from 298 tonnes in 1978/79 to 848 tonnes in FY1988. This reflects the growth of demand from the beverage bottling plants. Production of oxygen, on the other hand, has stagnated at around 150,000 cu m pa over this period, though rising to 197,000 cu m in FY1988.

Soap and detergents are currently produced at six publicly owned plants in Ethiopia, two in Asmara and four in Shoa. Five of these plants are operated by the National Chemical Corporation (NCC), but the sixth, the Addis Ababa Soap Factory, is on the same site as the United Oil Mill and is operated by NFC. Since the Addis Ababa Soap Factory represents nearly half of the 33,000 tpa installed capacity, this presents difficulties for planning, the standardisation and purchase of inputs, and the transfer of skills. In addition to the publicly owned plants, there eight private factories producing cleaning preparations, some of which manufacture products (Lux Soap, for instance) under licence from international companies.

One of the major problems facing the industry is the age of the equipment in use. Five of the soap and detergent plants were built in the 1960s and the other dates from the 1930s. Plant failure and breakdowns meant that the Addis Ababa Soap Factory could only operate at 20 per cent of nominal installed capacity in mid-1988. At the Asmara Soap Factory, the plant is so obsolete that a recent study recommended that it should be closed down. Soap factories have also found difficulty in purchasing adequate supplies of raw materials, even though virtually all the tallow used in the soap plants is supplied locally. Nevertheless, production of soap and detergent increased from 8,800 tonnes in 1978/79 to 15,500 tonnes in 1985/86, and then doubled to 32,700 tonnes in FY1988. Despite the rapid growth in output of recent years, production was insufficient to meet demand in the 1980s and substantial quantities of these products were imported (soap and detergent imports amounted to about 17,000 tonnes in 1986/87). However, there are no plans to establish new plants. Instead, NCC plans to refurbish existing capacity and relocate the Addis Ababa Soap Factory to a site where expansion is possible.

Three plants in Addis Ababa manufacture good quality paints, varnishes and lacquers: the Tseday Paints Factory and Chora Oxygen and Chemical Factory, both operated by NCC, and the privately owned Kokeb Paints Factory. Production increased from 1,876 hl of paint and 44 hl of lacquer and varnish in 1978/79 to 3,556 hl and 100 hl respectively in 1983/84, but then fell to less than one-third of this amount in 1985/86. Output recovered the following year. Both publicly owned plants are handicapped by the age of their machinery and difficulties acquiring essential spare parts and inputs. Concern has also been raised about the safety measures employed;

both plants use highly flammable solvents. If adequate supplies of raw materials could be guaranteed, there may be an opportunity for these plants to diversify into the production of printers ink.

The Addis Tyre Factory, now operating as a share company, was established as a joint-venture with the government of Czechoslovakia in 1972. It produces a range of vehicle tyres and inner tubes from imported rubber. Output has increased from 93,700 tyres in 1978/79 to 107,000 in FY1986, jumping to 170,000 in FY1988 after plant refurbishment in 1986. However, the plant still only covers 40 per cent of the domestic market. In view of the shortage of tyres in Ethiopia, Czechoslovakia, the Federal Republic of Germany and the United Kingdom have agreed to help finance a Birr62 million expansion project at the factory. This will increase capacity by 70 per cent, another 104,000 tyres and 100,000 inner tubes per year. The project also envisages the establishment of an experimental rubber plantation.

There are three battery manufacturing plants, two in Asmara and one in Addis Ababa. Management of these plants is divided between the NCC and the National Metalworks Corporation (NMC). This handicaps co-ordination between the plants. For instance, a study in 1986 revealed that the two plants in Asmara produced lead oxide while the Addis Car Battery Factory imported this material. Output has stagnated at around 7,000 units during the 1980s. This is well below capacity and the current demand for vehicle batteries. NCC plans to increase production during the FYDP by rehabilitating and expanding the Addis Ababa factory, which was originally built in 1960. Production will increase to 80,000 batteries per year by the end of the third phase. Dry cell batteries are currently produced at the United Abilities Company. The factory is specially designed for disabled workers. It has a nominal capacity of 10 million R-20 type dry cell batteries. Although the plant currently operates at around 90 per cent of capacity, this is inadequate to meet domestic demand, estimated at about 25 to 30 million batteries of various types per year. NMC has plans to establish a new dry cell battery factory, with estimated cost of Birr25.8 million and a capacity of 116 million batteries per year.

Four publicly owned enterprises manufacture plastic products, two of which are managed by NCC, one by NBC and the other by NFC. There are, in addition, six small-scale private sector enterprises engaged in this activity. These plants have been established in response to import substitution opportunities and the range of products is diverse, including household articles such as buckets, insulated cables, crates and bottles, polythene packaging, shoes and, most recently, ball point pens. Output of polyethylene products increased from 385 tonnes in 1978/79 to 965 tonnes in 1982/83 but then stagnated at around this level until 1985/86. Production statistics for enterprises under MOI supervision indicates that the growth trend resumed thereafter. Output of

plastic wires increased from 5.3 million metres to 7.6 million metres over the 1978/79 to 1985/86 period. Production is handicapped by dependence on imported base chemicals. Better co-ordination between the plants would help reduce import costs and assist production planning. Further diversification of the product range should also be a medium-term goal. This will, however, depend on the development of facilities for the production of injection moulds, most of which are currently imported.

Approximately 20 per cent of the pharmaceuticals consumed in Ethiopia are produced locally, at a plant originally established in Addis Ababa in 1962, now operated by the Ministry of Public Health. Output of medicinal products, comprising a range of capsules and tablets, antibiotics, vaccines (cholera and typhoid), syrups and ointments, has increased gradually throughout the 1980s and there are plans to expand both the quantity and the range of products so that domestic production can supply 35 per cent of the market. Of particular interest is production of vaccines used in the WHO Expanded Programme of Immunisation (diphtheria, pertussis, tetanus and tuberculosis), all of which are currently imported.

Four small-scale private enterprises produce a limited range of cosmetics for domestic consumption. Output is restricted by the shortage of necessary inputs and the high price of these products. Virtually all of domestic demand for perfumes, toothpaste, make-up, hair oils and shampoos, and shaving cream is met from imports at a cost of approximately Birr1 million per year over the period 1982-85. A UNIDO commissioned pre-feasibility study argues that a small-scale plant could manufacture these products successfully. Most of the base materials and concentrates would have to be imported, but the plant would use a small quantity of local raw materials (glycerin, calcium carbonate, maize starch and salt, for instance).

Aromatic herbs (lemon grass, geranium and eucalyptus citroidora) are already processed to manufacture essential oils in a steam distillation plant at Wendo Genet, operated by NCC. The plant was originally opened in the 1950s but a shortage of raw materials led to low capacity utilisation rates. This problem has been resolved by the purchase of land from neighbouring Peasant Associations. Commercial production began in 1988. Once output has increased to a stable level, exports are planned. A low cost mobile distillation plant is also under consideration.

Under the FYDP (FY1990-FY1994), priority has been given to the establishment of basic chemical industries which would use local resources and reduce dependence on imported inputs. In 1986/87 Ethiopia imported 46,000 tonnes of chemicals at a cost of Birr115 million, 5 per cent of the total import bill.

One of the most important of the new projects is a soda ash manufacturing plant, currently under construction at Zuwai near

Lake Abijata, in the Rift Valley (see Section 5.5). The plant's initial capacity will be 10,000 tpa. This will be more than enough to meet domestic demand from the soap manufacturing and textiles industries - in 1985/86 the chemical branch used 1,151 tonnes of imported caustic soda - and may allow some exports within the PTA.

A plant for the manufacture of aluminium sulphate and sulphuric acid is at the design stage. The plant's production capacity will be 13,600 tonnes of aluminium sulphate and 14,000 tonnes of sulphuric acid per year. Most of the aluminium sulphate will be used as a flocculant in drinking water, though there may be opportunities for use in the paper milling industry as a surface filler. At present imports cost about Birr1.5 million in foreign exchange each year. Sulphuric acid is one of the most important basic chemicals - Ethiopia currently imports about 7,000 tonnes per year - and production could offer considerable foreign exchange savings. Furthermore, production of sulphuric acid offers considerable opportunities for vertical integration into the production of other import substitution products, besides aluminium sulphate, notably production of sodium sulphate and dodecylbenzene. Dodecylbenzene is currently imported in large quantities and there may be opportunities for export to PTA countries.

Another basic chemical production plant currently at the design/implementation stage is the manufacture of alkyd resins, which are currently imported. These are widely used as film-forming agents in paints and varnishes. The plant has a planned capacity of 2,200 tonnes, most of which will be sold within Ethiopia.

Besides the above three projects, the MOI is studying a wide range of potential basic chemical industry projects with a view to implementation in the long-term:

Bentotite - Bentonite can be used to produce bleaching earth, used as a filter and decolorising agent in the food and textiles industries. Imports currently amount to about 300 tpa. However, the minimum viable plant is 3,000 tonnes and the probable production costs are not favourable for export sales.

Biomass based chemicals - Through a process of dry distillation, locally available biomass could be used to manufacture acetic acid (used in the textile industry), creosote, raw methanol which could be used as fuel, and charcoal.

Bone based chemicals - As the meat processing and leather industries develop, bone will provide a potential resource. According to a 1986 pre-feasibility study, a small plant could produce 1,000 tpa of fat, 2,000 tpa of glue and 30,000 tpa of normal super phosphate. It would have a relatively high IROR and could generate foreign exchange from the sale of glue.

Bromine - Brines at the Assab Salt works have a bromine content of 2.63 kg and, at the current output of the salt works, 650 tonnes of bromine could be produced per year. Although bromine prices are high, largely because three companies control 90 per cent of world supply, this scale of processing is considered uneconomic.

Calcium Carbide - Production of calcium carbide from quicklime and coke might be viable in 7,000 tpa capacity plant, though electricity costs could be prohibitive. It could provide feedstock for the production of calcium cyanamide, a fertiliser and herbicide which may be used in the defoliation of cotton or other plants to facilitate harvesting and ripening.

Chlor-alkali plant - A chlor-alkali plant using salt from the Assab salt works could produce 3,500 tpa of chlorine (for use in water purification), 200 tpa of sodium hypochlorite (a bleaching and sterilising agent currently imported in small quantities), 250 tpa of hydrogen chloride (150-250 tonnes of which were imported for use by NFC and NTC in 1985), and 4,300 tpa of caustic soda. High electricity tariffs may make the project uneconomic.

Diatomites - Small quantities of diatomites are used in Ethiopia, though there is a large international trade in this product for use as filtration agents (in brewing, for instance), a filling agent in paints and as insulation. Export sales from deposits within Ethiopia (see Section 5.0) are likely to be constrained by high freight costs to the port.

Furfural - Used in lubricating oil, fuel processing and in the production of resins, furfural is a product with export potential. The major inputs are, or will be available locally: biomass in the form of corn cobs or bagasse, sulphuric acid and soda ash. A pre-feasibility study, undertaken in 1986, indicates that 3,000 tpa plant would generate substantial foreign exchange though the IROR would be low.

Hydrogen Peroxide - In the mid-1980s Ethiopia imported 500 tonnes of hydrogen peroxide for use as a bleaching agent in the textiles, leather, food, paper and pharmaceuticals industries, though the volume of imports is expected to rise to 1,200 tonnes per year in the early 1990s. Since the minimum viable plant is 2,000 tpa, development of a hydrogen peroxide plant would have to take export potential into consideration. The high cost of electricity, which would account for about 65 per cent of total production costs, may also be prohibitive.

Industrial explosives - About 1,100 tonnes of industrial explosives are imported each year. Although the minimum viable plant has a capacity of about 8,000 tpa, the plant could be viable if explosives are exported, perhaps within the PTA.

Alongside the development of a basic chemicals industry, the MOI seeks to strengthen linkages between the chemical industry and agricultural sector through the establishment of pesticide and, possibly, fertiliser production plants. Despite the importance of agriculture to the Ethiopian economy, a 1987 UNIDO study (UC/ETH/85/214) revealed that there were practically no pesticide formulation facilities in Ethiopia - Shell Chemicals operates a small lindane dust formulation plant and another MOA operated plant closed in the mid-1980s owing to a shortage of spare parts. Virtually all the pesticides used have to be imported. Owing to foreign exchange constraints, imports fluctuated from 1,660 tpa to 4,137 tpa over the 1976-86 period, though an upward trend could be seen with imports averaging 2,250 tpa from 1980-86.

The level of pesticide consumption is extremely low by international standards and their use is largely restricted to the state farms: neither the formulation or bulk packaging of imported pesticides is suited to the needs of the peasant farmers. Since pesticides can make an important contribution to yields, there is an urgent need to begin domestic production. The UNIDO study advised that a small-scale formulation plant should be built in order to take advantage of import substitution opportunities and propagate the use of pesticides within the peasant sector. It envisaged a two-staged development: phase I, a liquid pesticide plant with a capacity of 1.5 million l; phase II, a granule production plant with a capacity of 750 tpa and a dust production plant with 1,000 tpa capacity. By producing a limited range of pesticides economies of scale could be achieved. The local material content would be about 30 per cent for liquids and 85-99 per cent for dust and granules. The plant would generate high value added and offer considerable foreign exchange savings. At present, the MOI is promoting a project along these lines, with a capacity of 1,500 cu m per year, for international financing.

Establishment of a pesticide formulation plant should, however, go hand in hand with improvements in the marketing system so that a larger proportion of total output reaches consumers in the peasant sector. All agricultural inputs to the peasant sector are distributed by the Agricultural Inputs Supply Corporation (AISCO) through a network of nearly 600 distribution centres which sell to the service cooperatives. Owing to the cooperatives' limited financial resources, the default rate on purchases from AISCO is high. Other peasant farmers depend on purchases through private sector traders.

There are similar problems with the marketing of fertilisers. Levels of fertiliser application in Ethiopia are among the lowest of the low income group of countries, amounting to 66 g per ha of arable land in 1986, less than 10 per cent of the average. As with the use of pesticides, fertilisers are largely restricted to the state farms. There are no local production facilities and so all fertiliser has to be imported. Imports increased during the early

1980s from an average of 35,500 tonnes in 1981/82-1982/83 to 68,500 tonnes in 1985/86-1986/87. However, the quantity imported has varied markedly from year to year owing to foreign exchange constraints. The construction of a fertiliser plant would offer opportunities for import substitution and the tailoring of fertiliser production to meet the demands of the peasant sector.

A pre-feasibility study for a fertiliser complex is currently in preparation. This envisages a plant producing 660,000 tpa of DAP and 340,000 of urea at a cost of Birr460.5 million. No other details are available. However, on first impressions the prospects are not favourable. Ethiopia lacks suitable raw materials. Gas deposits have been found in the Ogaden region (see Section 5.0) but these are unlikely to be commercially exploited for several years and the production of fertilisers may not be the most economic use of this resource when it does come on stream. The alternative, electrolytic production of ammonia, is likely to be prohibitively expensive because of the cost of electricity. Fertiliser production will, consequently, remain a long-term objective. In the meantime, the MOI is investigating the potential of other mineral inputs to the agricultural sector, such as non-metallic sorbents, which have been shown to have a beneficial impact on productivity.

3.7 Non-metallic mineral products

The non-metallic minerals sector is dominated by the production of construction materials, cement in particular. Virtually all of the new investment in the branch during the 1980s has been directed towards the expansion of cement production capacity, through the construction and expansion of the Muger Cement Factory. Output of this commodity tripled between 1980/81 and FY1988. This massive increase in cement production accounts for the 17 per cent average annual growth rate of production value for the branch over this period. Growth in the construction sector, which averaged 3.1 per cent over the FY1981 to FY1987 period, has not kept pace. As a result there is concern that further expansion will result in over capacity. In contrast, output of other construction materials first stagnated in the late 1970s and then fell in the mid 1980s, both as a result of sluggish demand and supply constraints.

Much of the problem lies in the low level of house construction. Even though there is an acute shortage of housing in Addis Ababa and most rural housing is of poor quality, financial constraints limit the government's building programme to about 4,000 houses per year. Controls on the sale and rental of private property, introduced in 1976 and strengthened in 1986, have meant that traders do not regard housing as a profitable investment and construction for the rental market has all but stopped. Housing cooperatives have been encouraged as the means by which people can borrow money to build their own homes but the number of houses built by these self-help organisations has been relatively small (6,000 from 1976/77 to 1983/84). Consequently, demand for construction materials, particularly those manufactured by small-scale enterprises has tended to stagnate. Ironically, falling production of construction materials in recent years has meant that those willing and able to build their own homes face shortages of bricks, tiles and other construction materials.

The government's decision to allow the private construction, ownership, sale and rental of houses and offices in March 1990 will alleviate this problem by stimulating the demand for construction materials. In the short term the shortages of construction materials will intensify but a rapid proliferation of small-scale enterprises in the construction and construction materials sector may be anticipated as entrepreneurs step in to secure scarcity rents. Regulation - in terms of quality - will have to be strengthened.

Cement is by far the most important construction material manufactured in Ethiopia, accounting for 66 per cent of the gross value of production within the branch in 1985/86 and 61 per cent of the value added. There are four plants in operation at present: the Dire Dawa Cement Factory, built in the 1930s; Addis Ababa Cement Factory, established in 1964; the Eritrea Cement Factory at

Massawa, established in 1965; and the Mughher Cement Factory, which began operation in 1983. Completion of the Mughher Cement Factory allowed a rapid increase in output to 406,000 tonnes in FY1988 after a period of stagnation in the early 1980s when output had levelled out at about 140,000 tpa. Construction work is currently underway to double capacity at the Mughher plant to 300,000 tpa, at a cost of Birr180 million. There is some doubt that the market will be able to absorb the increase in production in the near future. Consequently, plans to build a fifth 600,000 tpa capacity plant at Dire Dawa have been shelved. Instead, the MOI hopes to rehabilitate two of the older production facilities.

The Addis Ababa plant has a nominal capacity of 70,000 tpa, which it achieved profitably in the period up to 1975. Since then the plant has regularly incurred losses: by 1985 cumulative losses amounted to Birr7.2 million, 80 per cent of the start up capital. The Eritrea Cement Factory also has a nominal capacity of 70,000 tpa, though it has only achieved full capacity once in 25 years of operation. From 1965 to 1975, output averaged 63,000 tpa but it dropped to an average of 45,000 tpa thereafter. Falling output has resulted in large losses which now exceed the initial capital investment. Both plants face technical difficulties in maintenance and production management in addition to marketing. The MOI has requested UNIDO's assistance in the diagnosis and resolution of these problems. It has also expressed its interest in the formulation of a sectoral plan which will help rationalise production in the long-term.

Cement is used in the manufacture of a range cement blocks, tiles and pipes for the construction industry. The Ethiopian Construction Materials Corporation (ECMC), supervised by the Ministry of Construction, manages seven factories manufacturing these products, all of which are based Addis Ababa. These plants provide materials for the government's housing construction programme which amounts to about 4,000 units per year (approximately 20 million sq m). In addition, there are 22 small-scale private-sector enterprises producing similar products and fired clay bricks in Shoa, Wollo, Haraghe, Eritrea and Gojjam. These enterprises sell most of their output to private sector building contractors. The output of many of these small-scale enterprises is not recorded in official statistics. However, the statistics available indicate that production of construction materials has fallen in recent years: output of cement blocks and tubes peaked at 3.3 million units in 1983/84 and subsequently dropped to 2.9 million units in 1985/86; production of clay bricks peaked at 25.1 million units in 1982/83 and fell to 12.7 million in 1985/86; and output of cement floor tiles reached 556.3 million sq m in 1983/84 and then fell to 243.2 million sq m in 1985/86. Shortages of materials, cement and, in the case of the brick industry, fuel, may explain part of this decline but it also reflects lower levels of activity in the construction sector. It is understood that a number of small-scale private sector

enterprises have been forced to close in recent years owing to demand and supply constraints.

As demand for construction materials increases, following the implementation of the reforms proposed in March 1990, this sub-sector will see rapid growth. In order to facilitate this growth, the sector could benefit from technical assistance in the development of appropriate technologies for low-cost building materials based on locally available materials - clay, building stone and composite blocks.

Enterprises operating under the ECMC and selling to the Ministry of Construction are subject to quality control checks, though these are irregular and contractors report that many of the locally produced construction materials are sub-standard. This problem is particularly acute in the private sector which, when selling to private sector contractors, is virtually unsupervised. Particular problems are the low cement content of cement blocks, use of contaminated sand and aggregates, and the inadequate and uneven firing of bricks. Standardisation of production methods and the enforcement of production standards should be a long-term goal.

The Addis Ababa Asbestos Factory was established in 1968 with a nominal capacity of 423,000 corrugated and flat asbestos sheets and 72,000 pipes of various dimensions. In recent years, however, production has averaged only 120,000 sheets per year and several years ago production of asbestos pipes was discontinued. The plant faces technical difficulties, the machinery is obsolete and frequently breaks down, rejection rates are high, and all the asbestos used has to be imported. The MOI has requested UNIDO's assistance in the preparation of a diagnostic study and rehabilitation plan.

Two lime production plants have been closed in recent years: the lime plant at the Franchetti and Rossi Factory at Asmara was closed in 1979 owing to a shortage of raw materials; the Dire Dawa Cement and Lime Factory was closed in 1987, after 53 years of operation, because of its obsolete machinery. Only one plant, the Ethio Lime Factory (Senkele), established in 1964, remains in operation and this is no longer working efficiently. A shortage of labour prevents the factory working at full three-shift capacity. The two furnaces, the older of which uses charcoal as fuel, the other fuel oil, originally produced 80 to 95 per cent burnt quick lime from each firing, but the efficiency has dropped to 55 per cent. Refiring is now necessary. This raises production costs and reduces output. Total output of lime dropped from 5,100 tonnes in 1980/81 to 4,000 tonnes FY1988. The MOI has asked UNIDO to assist in identification of a suitable rehabilitation strategy. It also has plans to construct a new lime factory during the FYDP period, at a cost of Birr34 million.

Ceramic wall and floor tiles, refractory bricks and some sanitary ware are manufactured at the Tabacchi Franchitti and Rossi in Asmara, managed by ECC since March 1988. The plant is over fifty years old, the machinery obsolete and spare parts have to be tailor made. A complete overhaul of the plant is needed if production is to be increased.

Quarried stone is widely used in construction. In recent years, attention has focused on the development of decorative stones such as marble, granites and dolomites, supervised, since 1983, by the Ethiopian Marble Industry (EMI). Technical assistance from UNIDO ((US/ETH/81/007) has helped EMI identify stocks of decorative stone suitable for development, reactivate two of marble quarries so that three are now operating (Gulele, near Addis Ababa, and Bole and Nefas Silk, in Harar), increase output from 7,700 sq m of marble slabs in 1981 to 28,000 sq m in 1985, and train staff in the use of marble cladding. Potential production capacity is now estimated at 140,000 sq m per year. UNIDO is currently engaged in a follow-up project (US/ETH/87/233) which aims to increase capacity at Harar Quarry (No.2) from 900 cu m per year to 1,540 cu m per year by 1991 and upgrade the processing techniques at the Gulele Marble Factory. The project will also establish an ornamental marble production unit which will provide employment for women. In addition to the development of high value building materials UNIDO is also trying to promote the use of tuff as a low cost-building material. Preliminary investigation indicated that the cost of tuff blocks could be 50 per cent lower than the cost of fired bricks and the cost of energy consumption about 85 per cent lower.

At present, the range of non-metallic mineral products used outside the construction sector is extremely limited. Glass is the most important of these products, though it accounted for only 20 per cent of gross production value within the branch in 1985/86. Two plants operated by the EBC, one in Asmara and the other in Addis Ababa, produce bottles and glasses. There are also two small-scale private sector enterprises producing glass and another small-scale plant producing a limited range of glass products. Output of bottles has increased from 9.5 million in 1980/81 to 27.7 million in 1985/86, though output has fluctuated over this period and peaked at 28.4 million in 1981/82. Production of tumblers peaked at 9.9 million in 1982/83, falling by 80 per cent the following year, then recovering to 5.7 million glasses in 1985/86. The combined output of bottles and glasses dropped dramatically to 10.5 million units and 15.5 million units respectively in FY1987 and FY1988. Such large fluctuations in production result both from shortages of inputs, imported soda ash in particular, and the obsolescence of much of the plant. The rehabilitation of the Addis Ababa plant in the mid-1980s does not appear to have significantly improved performance over the long term.

Given the steady growth of the beverage sector in recent years and the its export potential it would appear expedient to increase

and diversify production of glass bottles. Shortages of bottles are now identified as a constraint on the output and exports of the beverage branch (see Section 3.2). Until recently, bottles were in such short supply that EBC asked export customers abroad to return empties. Deposits are placed on all domestic sales. Poor quality and the limited range of products is also a major problem: in mid-1987, for instance, the Addis Ababa factory was unable to produce green-tinted glass for wine bottles. Furthermore, locally made glass is approximately 30 per cent higher more expensive than that manufactured in Europe.

There have been plans for the establishment of a sheet glass manufacturing plant since 1982. At present, all the sheet glass used in construction is imported, even though Ethiopia exploits or will soon exploit the raw materials needed for glass manufacture: soda ash, silica sand, limestone, feldspar and dolomite. ECC considers that a sheet glass plant could save considerable amounts of foreign exchange and the project has been included in the indicative list of new projects under the FYDP, with an estimated cost of Birr57 million. A detailed economic and technical feasibility study has yet to be completed.

The Ethio-Pottery Plant established in 1974, and now operated by the Ministry of Mines and Energy, was originally intended to manufacture pottery household items. However, a shortage of fuel oil and skilled staff has restricted production to coffee cups. In 1986, UNIDO (SI/ETH/85/801) advised that the plant could be rehabilitated and production expanded by the construction of a production line for the manufacture of electrically heated hot plates. Small scale potteries manufacture household items such as cooking pots, coffee pots and injera baking plates at Lageadi, Katcheny and Gaffarsa near Addis Ababa, one of which operates as a women's co-operative. Production is at a handicraft level; the pots are shaped by hand and fired with cow dung or wood when available.

It is only recently that the MOI has gone ahead with plans to establish an industrial ceramics complex at Awassa, in Sidamo, based on kaolin deposits at Bombawoha 130 km distant (see Section 5.0). Transport costs, both from the mine to the ceramics factory and for products to markets, will be extremely high. The plant, costing an estimated Birr71 million, will have a production capacity of 2,000 tpa of table ware, 1,000 tpa of sanitary ware and 3,121 tpa of tiles. Unfortunately, the raw material is only 40 per cent kaolin and so bonding strength is low. This limits production to sanitary ware and utility porcelain. White china and hard porcelains could only be produced by the costly process of upgrading the quality of the kaolin.

3.8 Metal products and engineering

In 1986/87 the metal products and engineering branch accounted for 6.4 per cent of total gross production value and 5.1 per cent of manufacturing valued added. The branch achieved a 5.5 per cent average annual growth rate of production value over the period FY1980 to FY1988, only slightly higher than the average for the industrial sector as a whole, and so its contribution to manufactured output changed little. Although the branch's contribution to output is relatively small, it plays an important role within the economy. Nearly 90 per cent of the metal and engineering sector's production value was in the form of capital and intermediate goods, and the branch had strong linkages with the construction and agricultural sectors as well as with industry.

Most of the output of metal products is, however, low value and low technology. In FY1987, structural steel and other products for the construction industry accounted for 62 per cent of the branch's gross production value. This share had fallen from 81 per cent in FY1980, largely as a result of the establishment of vehicle assembly operations and the expansion of production of simple hand tools, bottle tops and cans, and household utensils. In the mid-1980s, Ethiopia's engineering capacity was still limited to maintenance and repair work. As a result, Ethiopia was almost completely dependent on imported machinery and technology. Imports of metal, engineering and electrical products amounted to Birr1,000 million in 1986/87, 45 per cent of the total import bill.

Development of a local engineering capacity was identified as a priority in the TYPP (FY1985-FY1994), which planned to allocate 14.7 per cent of investment to the metal and engineering branch over the ten year period so that its share of industrial output would increase to 11.2 per cent. Particular attention has been given to the implementation of projects which will introduce new engineering skills, notably the Akaki Spare Parts Factory, while expanding existing production facilities and diversifying the production base, particularly into intermediate and capital goods for the agricultural sector.

There are no iron ore reduction facilities in Ethiopia. Although plans for a integrated mini-steel plant have been discussed, Ethiopia has no large ore-body and so the development of such a project is unlikely. The bulk of the basic metals used are imported (18,100 tonnes of steel and 266 tonnes of aluminium 1985/86). Two foundries also produce steel from mixture of steel bars and local and imported scrap steel (4,144 tonnes in 1985/86). The Ethiopian Iron and Steel Foundry at Akaki Beseka, operated by the National Metal Works Corporation (NMWC), is the largest of these facilities. Originally established in 1941, much of the equipment is over 40 years old. The foundry comprises a 5,000 kg arc furnace, commissioned in 1961, which melts down a 40 per cent scrap and 60 per cent imported steel mix to produce 85-90 kg pencil

ingots. These are then re-heated and rolled through a 600 HP press which produces ribbed steel reinforcing rods. There are virtually no facilities for quality control testing either of products or inputs - scrap metal is sorted by visual inspection. About 65 per cent of the foundry's output is in the form of reinforcing rods, 30 per cent is produced as nails and 5 per cent as wire bed springs and wire-fencing. In 1984, the last year for which plant level production statistics are available, the foundry produced 12,000 tonnes of reinforcing rods and 4,000 tonnes of nails on a two shift basis. NMWC's other large foundry is the Ethiosider Iron and Steel Factory in Asmara, built in the 1940s. In 1985/86 a new furnace, electro-heater and rolling mill were installed. The plant produces reinforcing rods and a mixture of nails, blackwire, bed springs, barbed wire, gabions and fencing net. Output of foundry products has grown very slowly in recent years, rising from 17,463 tonnes in 1980/81 (of which 69 per cent reinforcing rods and bars; 24 per cent nails; and 7 per cent wires) to 19,044 in FY1988 (of which 71 per cent reinforcing rods and bars; 24 per cent nails; and 5 per cent wires).

In addition to these two foundries producing bulk, low precision and low value items there are a number of foundries which supply precision parts for assembly operations. The most important of these are the Water Pumps Factory, opened in 1987, with a capacity of 350 tpa and the foundry at the Akaki Spare Parts Factory, commissioned in 1988, which has a capacity of 4,450 tpa of ferrous and non-ferrous castings. There are also a few low-capacity service foundries. The Dire-Dawa Railway Workshop operates a foundry with a total capacity of 500 tpa, which mainly produces parts for the railway but also carries service work for nearby cement and textile factories. Six private sector foundries in Addis Ababa produce a range of low quality castings and have a total capacity of only 100 tpa. In contrast, the castings manufactured by the two private sector foundries operating in Asmara are considered to be of high quality and are purchased by the vehicle assembly plant, textile mills, cement works and other industries. Unfortunately, inadequate supplies of raw materials and shortages of skilled staff prevent these foundries from working at full capacity.

As is the case in other sectors of engineering, there is a shortage of skilled foundry personnel. To address this problem, NMWC has requested UNIDO's assistance in the establishment of a pilot demonstration foundry, which could both train staff and develop new techniques and products (DP/ETH/86/004/D/01/37). The proposed foundry would have a capacity of 1,000 tpa and would be self-financing, operating as a service-foundry producing a wide range castings for assembly operations and spare-parts.

Structural steel products (girder structures, pipes, window and door profiles and angled steel sheets) are manufactured at the Kaliti Steel Plant, both for the general market and custom built for clients in industry and the construction sector. The quality of

the steel structures is generally poor: cutting, for instance, is imprecise and often judged by eye, as a result the structures have to be balanced by thick metal plates which reduces their load bearing strength. The Akaki Metal Products Factory produces galvanised plain and corrugated steel sheets and, since 1985, galvanised metal pipes. Output of metal sheets has fluctuated within a range of 26,500 tonnes to 16,300 tonnes in the period 1980/81 to FY1988, though the overall trend has been a 6 per cent fall in production.

The facilities at both these factories offer opportunities for diversification into the assembly of steel products. A small production facility attached to the Kaliti Steel Plant already produces slotted angel shelves, window and door profiles, wheel barrows and a limited range of metal furniture from tubular steel. In January 1989, the factory also began production of maize shelling and grain milling machinery. A new press with a capacity of 450 tonnes has been installed for this purpose and castings are purchased from the water pump factory nearby. The plant aims at production of 1,000 machines per year. With little modification to the Akaki Metal Products Factory production could be diversified into the manufacture of prefabricated silos, sheet structures, pipe and girder structures such as electricity transmission pylons, truck bodies and simple machinery such as flues for coffee washing plants. Thirteen small and medium-scale private sector enterprises already produce a range of products along these lines: barrels, furniture, window and door frames. Obsolete machinery and difficulties in acquiring raw materials make it difficult for these private sector enterprises to attain full capacity. A feasibility study is currently in preparation to assess the viability of a pipe fittings and valves factory with a capacity of 1,125 tpa of general fittings, 120 tpa of gate valves and 90 tpa of sanitary fittings.

NMWC manages four factories that produce metal household utensils and cutlery (aluminium kettles, cooking pans, wash basins, enamelware, tin cans, pots, trays, galvanised buckets, for instance). All four plants are over twenty five years old and much of the machinery is obsolete. A recent study advised that they were all in need of a complete overhaul. To compound this problem the plants suffer shortages of skilled staff and raw materials and difficulties in distributing their products. These problems are even more acute for the three small-scale private sector enterprises producing a similar range of products. Such is the shortage of raw materials that one private sector cutlery-maker uses nails as the primary input. There appears to be little prospect of capacity increasing output in the near future since the manufacture of household items is low on the MOI's list of priorities.

Tin cans, bottle tops and corks are manufactured by Crown Cork, a share company established in Addis Ababa in 1971, and, on a much smaller scale, by a private sector plant in Asmara. Both

plants import tin plate (amounting to 2 million sheets in 1985/86). Production of cans has fluctuated from 1.1 million cans to 2.1 million over the period Y1985 to FY1988, largely because of foreign exchange availability, even though Crown Cork is regarded as strategic enterprise and has priority access to inputs. Output of bottle tops, on the other hand, has increased steadily over the same period, from 3.5 million gross to 4.6 million. This is still insufficient to meet demand. Construction work is currently underway to expand output at the Crown Cork site by 1 million bottle tops and 1.2 million cans.

Production of simple forged hand tools at two factories is the main linkage between the metal-working branch and the agricultural sector. The Ethiopian Metal Tools Factory was originally established in 1969 to produce 500 tpa of hand tools for the agricultural (spades, shovels, axes, machetes, hoes, ploughs, rakes and spike harrows) and construction sectors (chisels, trowels, pliers, spanners and screwdrivers). A sickle production unit with a capacity of 1 million sickles per year was established in 1984, with assistance from the government of Poland. In 1988, hand tools for the construction industry were dropped from the production line and transferred to the Akaki Spare Parts Factory. The plant comprises an electric press with a capacity of 160 tonnes, a 150 tonne drop hammer, a furnace, three large diameter grinding wheels, a tool room for the production of dies, and a carpentry workshop to produce handle bars, though most of the tools are sold without handles. Most of the equipment is old, but it remains in good working order. A second plant sickle manufacturing plant, with a capacity of 400,000 sickles per year, was built at the Ethiosider Iron and Steel Factory (Asmara) in 1971.

Both these plants have suffered from competition from imported tools, largely because of the poor quality of the local products. Tool design was essentially the same as those manufactured by traditional blacksmiths. Although the quality of metal was better than those produced on blacksmiths' forges it could not compete with imported steel. Owing to inadequate quality of control, particularly in the heat treatment of blades, locally manufactured sickles, for example, had to be sharpened several times each harvesting season whereas imported blades need only be sharpened once a year. There were also defects in the shape and balance of the blade.

Marketing was also a problem. Both factories used to sell their products to the Agricultural Input Supply Corporation (AISCO) which then distributed them to retail outlets in the peasants cooperatives. AISCO has proved unable to guarantee regular deliveries. It does not have its own transport fleet and has to compete with other users or the services of the National Road Transport Corporation (NRTC). Furthermore, there was virtually no flow of market information from consumers through AISCO to the tools factories. Consequently, management had little knowledge of

consumer preferences. Neither AISCO or the factories organisation undertook market research.

As a result, output stagnated at around 20 per cent of total capacity and poor sales performance led to substantial losses. Then, in 1987, the Ethiopian Metal Tools Factory took over its own distribution. Following a market research study it began manufacture of better quality sickles, imitating imported products. Output nearly doubled to 494,000 sickles that year. In 1988, however, production slumped to its lowest level for five years, 229,000 sickles.

A project for the rehabilitation and expansion of the Ethiopian Metal Tools Factory is currently at the design stage. This envisages an increase in output to 12 million hand tools with an investment of Birr3.5 million. NMWC also plans to establish a new Agricultural Implements Factory at Nazareth. This would produce 79,000 animal drawn and 2,125 tractor drawn implements (such as ploughs and hoes) and 600 tpa of spare parts. The project would build on the skills already employed in the Ethiopian Metal Tools Factory.

Until recently, engineering has been restricted to maintenance workshops. Many, but by no means all, of the public sector factories maintain small maintenance workshops, though only a few of these have tooling facilities and where these exist they are generally inadequately equipped and staffed. This leads to lengthy down-times for equipment and low capacity utilisation rates. This problem is not confined to the industrial sector. Approximately half the country's tractors are out of operation to any one time due to inadequate maintenance and repair services. The most sophisticated maintenance workshops are those at the Dire Dawa Railway Workshop and the EELP Workshop in Addis Ababa. The latter, employs over 4,000 workers and services most of the EEPLA's electrical and diesel machinery, meters and vehicles. There are plans to establish a central maintenance and engineering workshop which would service and provide training for staff from the public sector corporations. This workshop would formulate plant level maintenance programmes, establish a data base and computerised spare parts inventory system and provide maintenance clinic with a pool of engineers. Such a workshop might well be established under the auspices of the Akaki Spare Parts Factory (see below). NMWC has requested UNIDO's assistance in the implementation of this project.

A private sector enterprise, the Tana Garage, already plays an important service role in the industrial sector. Equipped with horizontal lathes, vertical drilling machines, gear shaping and a crank shaft grinding machines, the Garage has carried out servicing and repair work for most of the public Corporations. With limited investment the plant could expand into the production of spare-parts and simple machinery. By contracting to small-scale

private sector engineering workshops for the production of spare-parts and machinery, the public sector would encourage the development of specialist engineering skills within the private sector.

Establishment of an national engineering capability is now regarded as an essential step in the development of Ethiopia's industrial sector and has been given priority in the FYDP (FY1990-FY1994). Whilst developing a skilled workforce, engineering projects will reduce dependence on a range of imported machinery and spare parts, thereby strengthening linkages within the industrial sector, and provide mechanical inputs to other sectors of the economy. The first steps in this direction were taken with the development of vehicle assembly operations, though the use of engineering skills in these plants remains extremely limited.

Two plants are engaged in the assembly of motor vehicles. The oldest of these is the Ethio-Bus Assembly Company, established on its present in Asmara in 1942 and nationalised in 1982. Ethiopian Road Transport Corporation (ERTC) imports the chassis and engines and delivers them to the plant for assembly and construction of the body work. Production capacity is estimated at 50 buses per year, but shortages of kits and skilled staff keep output well below this level. Nevertheless, output has increased from 15 buses per year in the early 1980s to 28 in FY1988. The Automotive Manufacturing Company of Ethiopia (AMCE) became operational in 1975. It is a joint venture between the Ethiopian government, holding 30 per cent of the equity, and FIAT, through IVECO (Amsterdam), which holds the remaining 70 per cent. The plant was designed to assemble 1,000 vehicles per year from imported kits (trucks, landrovers, small buses, dumpers and trailers). Details of production in recent years are not available, though it is thought that the plant is operating at less than half its full capacity, largely because of the limited foreign exchange available to purchase kits. The plant is heavily dependent on imported inputs; in the mid-1980s only 12 per cent the total cost of materials was purchased locally. The plant also employs a small number of expatriate managers and technical staff.

A tractor assembly plant at Nazareth (100 km from Addis Ababa) was completed in 1984 with assistance from the USSR. As initially conceived, the plant was to develop in three phases: in Phase I, the plant assembles 1,000 80 HP tractors per year from SKD (semi-knocked down) kits; in Phase II, production would diversify to include 200 combine harvesters and 600 trailers, while the plant would also produce 5,580 implements and 2,210 tonnes of production and spare parts; by the time the plant reached Phase III it would be most of the parts needed for assembly operations and production would reach 3,000 tractors and 400 combines per year. Progress towards these targets has been slow. Production reached 833 tractors in FY1986 but then slumped to only 100 tractors in FY1988 and production has yet to diversify.

Part of the problem appears to be the cost of imported parts, but the factory has also had difficulties selling its products. In April 1989, 300 tractors were waiting for sale at the factory, this amounted to 17 per cent of total production over the first five years of operation. The tractors were designed for use in the cooperative sector - the state farms use imported high-powered 120 HP tractors - where levels of mechanisation are still extremely low. Cooperatives may borrow from the Agricultural and Industrial Development Bank (AIDB; see Section 4.2) but the funds and the cooperatives capacity to pay back loans are limited. Furthermore, the distribution of tractors is in the hands of the Agricultural Equipment and Services Corporation (AESC), which is under the authority of the Ministry of State Farms and was established to provide equipment and centralised repair services to the large-scale mechanised agricultural sector. It has no links with the cooperative sector and its administrative machinery is ill suited to meeting their needs. As a result the coordination between the production and distribution of Nazareth tractors is poor.

While the MOI plans to go ahead with the expansion of production facilities at Nazareth, investing a further Birr822 million in the factory, the present distribution system would be better suited to the development of production facilities for high-powered tractors for the state farm sector. A project along these lines has been included in the FYSP plan but it appears to be at a relatively early stage of formulation.

An area of development which the MOI is currently investigating is the production of low cost vehicles. There is an acute shortage of transport equipment in Ethiopia (see Section 5.5), aggravated by dependence on imported vehicles and spare parts which are major drain on the country's foreign exchange earnings: in 1986/87 the total cost of imported road vehicles was Birr339 million (a large part of which was funded by international assistance). In order to reduce dependence on imports and provide a means of transport financially accessible to much of the population, a UNIDO financed feasibility study recommended that government establish a plant producing 12,500 bicycles, 5,000 125 cc motorcycles, 4,000 animal carts, 1,000 bicycle trailers and 1,250 motorcycle load carrying attachments each year. About 60 per cent of the inputs would be imported. Production would initially be an assembly operation but after three or four years the feasibility study argues, most of parts could be produced within the plant or by ancillary contractors. A project along these lines has been included in the indicative list of projects for the FYDP (FY1990-FY1994). Though it is still only at the pre-feasibility study stage, the MOI of industry appears to have substantially increased the intended scale of the plant, indicating that the planned total investment would be Birr32.9 million and the production capacity would be 35,000 bicycles and 23,000 bicycles. A similar project currently at the tendering and contracting stage, is the production

of vehicle trailers and tippers. This plant, to be built in Addis Ababa, will have a capacity of 2,800 items per year.

The first machinery production unit established was the Akaki Pump Factory, which began operations in 1987. Technical assistance, equipment, raw materials (pig iron), and the designs of hand and centrifugal pumps were provided by the government of PDR Korea. Castings are produced and assembled within the plant though the electrical motors are imported. By April 1989 the plant had produced 200 centrifugal pumps. During the FYDP, the plant will be expanded and output is expected to reach 1,500 centrifugal pumps and 3,000 pumps per year when it attains full capacity. UNIDO is providing assistance in the design of a new type of hand pump to suite to local needs. Since most of the wells in Ethiopia are deep there would be a market for submersible pumps, though there are no plans to develop such a product in the near future.

An important development within the engineering sector in recent years was the opening of the Akaki Spare Parts Factory in 1989. Built as a turn-key project by FATA Spa with a loan from the government of Italy, at a cost of Birr180 million, the plant is equipped with a foundry, forge, heat treatment plant and tool room. It will produce 3,500 spare parts per year for enterprises under MOI supervision. Most of these will be produced to order and so will demand the development of design and precision tooling skills. Technical assistance will be needed in these fields for some time to come. The plant will also produce 600,000 hand tools (a similar range to those formerly produced at the Kotebe Metal Tools Factory) and 1.5 million pieces of cutlery per year. This element of production will build on existing metal-working skills. Total employment is expected to reach 650 workers.

A number of other engineering projects have been included in the MOI's indicative project list for the FYDP (FY1990-FY1994). Notable among these are an central engineering workshop (see above); an automotive spare parts foundry, forge and toolshop; and diesel engine manufacturing plant. Other projects at the pre-feasibility stage include: manufacture of sewing machines, mini-hydro plants, two-wheeled tractors and simple industrial machinery such as concrete mixers.

In view of the planned development of the engineering sector, the MOI intends to establish an Engineering Design and Tool Centre (EDTC) in Addis Ababa. This institution will help develop product and equipment designs and prototypes which can be manufactured locally as well as adapting imported equipment. The Tool Centre will provide training for staff in the production of tools, dies, jigs, fixtures and moulds used in Ethiopian industry. UNIDO will provide technical assistance (DP/ETH/83/024/D/01/37).

At present there is no electronics industry in Ethiopia. The MOI of industry considers that this is an area which might be

developed in the future through the installation of assembly operations. It is currently promoting finance for an electronics complex, with a planned capacity of 300,000 radio, 20,000 black and white and 5,000 colour televisions per year. Feasibility studies are being prepared for a factory manufacturing electrical appliances (unspecified) and an electrical machinery plant, which would produce motors and transformers. The total investment cost for these projects would be around Birr164 million. Since there no skilled labour available in this field, these projects would have to be implemented within the framework of a joint-venture with a foreign partner. Another assembly operation - the production of electric bulbs, in a plant with a capacity of 120 million pieces per year - has yet to secure foreign financing.

4. STRATEGIES, INSTITUTIONS AND POLICIES FOR INDUSTRIAL DEVELOPMENT

4.1 Development strategy

The planning framework

The first steps towards the development of a central planning framework were taken in October 1978 with the establishment of the Central Planning Supreme Council and the launch of a National Revolutionary Development Campaign for 1978/79. Thereafter Development Campaigns (called zemechas) were organised on an annual basis. Although they announced ambitious targets for national development, implementation was handicapped by the absence of a comprehensive inventory of national resources and adequate co-ordinating mechanisms. The Office of the National Committee for Central Planning (ONCCP), reporting to the Council of Ministers, was established in 1984 to overcome these problems and in the same year the government adopted a long-term planning perspective with publication of its Ten Year Perspective Plan (TYPP) covering the period FY1984 to FY1993. The plan comprises a macro-economic framework, a Public Investment Programme (PIP), an indicative portfolio of projects and production targets defined in quantitative and financial terms. Flexibility is achieved by the division of the TYPP into shorter planning periods (one two year plan (FY1985-FY86), a three year plan (TYDP, FY1987-FY89) and a five year plan (FYDP, FY1990-FY94), each subdivided into annual plans) in which the goals and specified targets for investment and production are revised in line with the changing macro-economic situation, the progress of projects implemented under the plan and performance indicators submitted by each Ministry.

The broad objectives of the TYPP are:

- a. Gradually improving the material and cultural well-being of the people;
- b. Accelerating economic growth through the expansion of the country's productive capacity;
- c. Ensuring structurally balanced development of the national economy by expanding domestic resource based industries;
- d. Conserving, exploring, developing and exploiting rationally the country's natural resources;
- e. Expanding and strengthening socialist relations of production;
- f. Raising the level of education and skills of the people;
- g. Laying down the basis for the development of a national scientific and technological capability;
- h. Gradually eliminating unemployment;

- i. Alleviating social problems through the gradual establishment of a national welfare scheme;
- j. Ensuring balanced and proportional development of all regions of the country.

These objectives were reassessed after the drought of 1984-85 and three priorities not specifically mentioned in the TYPP document were listed in the TYDP published in 1986:

- a. Increased production of food crops;
- b. Increased foreign exchange earnings and diversified exports;
- c. Combating drought.

The TYDP is more specific than the TYPP in terms of its objectives. It seeks to address the economy's immediate problems rather than long-term development goals. Food production is the clear priority, followed by the production of export products to address Ethiopia's chronic balance of payments deficit and thirdly employment generation. The plan also stresses the importance of improved management and organisation. These priorities have been reiterated in the FYDP (FY1990-FY1994; announced in 1989), though greater stress has been given to the promotion of exports in the industrial and agricultural sectors and employment generation.

Table 4.1: Distribution of actual and planned investment by sector, FY1979 to FY1989
(Percentage shares)

Sector and sub-sector	Actual 1979-81	Actual 1982-84	Actual 1985-86	Planned 1987-89
<u>Productive sectors</u>	52.7	70.3	69.2	61.5
Agriculture & settlement	32.9	32.6	32.2	28.1
Mining, electricity & power	9.5	18.2	21.2	15.7
Water resources	6.4	5.9	7.3	5.8
Manufacturing	3.9	13.6	8.5	12.0
<u>Service sector</u>	31.7	17.0	17.1	25.2
Commerce & tourism	0.7	1.2	0.3	3.3
Transport & communications	30.8	15.6	16.2	20.7
Financial agencies	0.1	0.1	0.6	1.2
<u>Social services</u>	14.0	10.3	11.2	12.0
Education & culture	6.2	4.4	3.6	2.3
Public Health	3.5	2.7	1.9	2.0
Community services	4.3	3.2	5.7	7.7
Others	1.6	2.4	2.6	1.2
Total investment (Birr mn)	1,330	2,887	2,051	11,285
Average annual investment (Birr million)	443	962	1,026	3,762

Source: National Bank, Annual Report, Various Issues; ONCCP, Three Year Development Plan (FY1987 to FY1989), November 1986.

The distribution of investment reflects the priority given to the expansion of production (Table 4.1). The productive sectors received over 60 per cent of planned investment in the TYPP and TYDP and a similar proportion of actual investment in the period FY1979-FY86. Agriculture, the corner-stone of the economy, has received the largest share with 32 per cent of actual investment in the FY1979-FY86 period. Other important areas of investment are road construction (14 per cent), mining and energy (principally the latter, 17 per cent) and manufacturing (9 per cent). All the social services combined, by contrast, received only 11 per cent of investment realised in FY1979-FY86. This pattern of investment is not expected to change significantly under the FYDP (FY1990-FY1994).

Following the decision of the Central Committee of the Worker's Party of Ethiopia to reorientate the economy along the lines of market principles, the economic structures underlying the FYDP will be demolished. Under these circumstances, the validity of the FYDP as a planning tool must be doubted. Greater emphasis has been given to private sector investment throughout the economy. This will entail a reduction in public sector resources, as the banking sector allocates a greater proportion of its funds to private sector activities. It also undermines the rationale for substantial public sector investment in the productive sectors. Nevertheless, public sector investment will continue to play an important role in Ethiopia's economic development. The key area for public sector investment will be - as they have been in the past - infrastructural development in transport and communications, power, settlements, agriculture (particularly irrigation and forestry) and industry (where large-scale projects beyond the capacity of private sector investors are envisaged). Many of the projects identified in the FYDP will remain priorities and so the plan will not be scrapped altogether. However, a major revision of the Development Plan, reflecting the changes to the policy environment, will have to be prepared in the near future.

Industrial development strategies

Even though Ethiopia adopted a socialist, centrally planned economic framework in 1975, when all large-scale enterprises were brought under state ownership, there was no long-term development strategy for the industrial sector until the Ten Year Perspective Plan (FY1984-FY1993) was implemented in 1984. The priority in the years up to 1984 was to increase the supply of manufactured consumer goods in particular. Ambitious production targets were set in consecutive national development campaigns (zemechas) and these were achieved by improving capacity utilisation rates and labour productivity in existing large and medium-scale industrial plants. At the same time, the Ministry of Industry implemented 43 development projects, expanding existing plants and constructing new factories. Most of these projects were in the field of import substitution, aimed at satisfying basic needs and widening the

range of domestically produced consumer goods, particularly in the production of foodstuffs, beverages and textiles. A few projects sought to provide inputs to the agricultural and construction sectors. On the other hand, investment basic industries (metals, engineering and chemicals) was negligible. Moreover, little attention was given to sectoral planning. Instead, investments were identified on an project by project basis - using such criteria as identifiable shortages and the availability of domestic resources - assessed on their individual merits and implemented as and when funding was made available. During this period little was done to integrate small-scale private sector manufacturing enterprises into the overall industrial structure.

By the early 1980s, the shortcomings of short-term planning for industrial development had become apparent: import dependence, limited linkages within the industrial sector, inefficiencies in the distribution of domestic resources and minimal exports of manufactured goods. The TYPP (FY1984-FY1993) sought address these problems by providing a tighter planning framework for the industrial sector which would, in the long term, create a better integrated industrial structure, with export potential while continuing to increase production of consumer goods. These objectives were clearly stated:

- a. To increase production of essential consumer goods;
- b. To promote and strengthen handicrafts and small-scale industries;
- c. To increase production of equipment and spare-parts required for production by the agricultural, transport and construction sector;
- d. To give emphasis to the establishment and expansion of industries producing metals, chemicals and non-metallic mineral products, required for laying the groundwork for the expansion of heavy industries;
- e. To earn and save foreign currency;
- f. To create job opportunities at different levels by promoting more basic labour intensive industries; and
- g. To attain, as much as possible, balanced regional distribution of industrial development.

Although the production of essential consumer was identified as the priority, to reduce pressing shortages of many essential items, the most striking feature of the investment and production targets embodied in the TYPP was the government's determination to diversify Ethiopia's industrial structure. The plan envisaged rapid expansion of basic industries (chemical and metal products in particular), as a means of strengthening linkages within the

industrial sector (Table 4.2). Only limited progress towards this goal had been achieved by 1988.

Table 4.2: Planned and actual investment and production, selected years
(Percent share)

Branch	Investment			Gross Production Value		
	Actual 1975-84	Planned 1984-94	Actual 1985-88a/	Actual 1984	Planned 1994	Actual 1988a/
Food	37.3	25.0	10.1	26.6	17.9	20.2
Beverages	29.0	3.5	2.1	14.0	6.6	20.0
Tobacco	1.2	0.6	.5	4.7	3.5	6.8
Textiles	26.5	14.7	34.3	23.0	13.3	21.7
Leather & shoes	1.1	5.3	1.4	8.8	8.9	9.3
Wood & products	...	2.0	0.0	1.4	1.6	0.6
Paper & printing	...	11.2	0.5	2.7	2.3	4.2
Chemicals	1.4	0.8	1.5	2.4	25.5	7.5
Non-metallic	3.0	22.2	15.7	10.1	9.2	3.4
Metal products	0.5	14.7	33.1	6.3	11.2	6.2

a/ Ministry of Industry supervised enterprises only.

Source: ONCCP, Ten Year Perspective Plan (1984-1994), 1984; Ministry of Industry, Bulletin, various issues.

Statistical

As in the late 1970s and early 1980s, the government's industrial development strategy emphasised measures to increase production using existing capacity. Higher rates of capacity utilisation and labour productivity were to be achieved by improvements in training and the introduction of incentive schemes; strengthening of repair and maintenance services; improvements in quality control; and the development of design, engineering and research capabilities to choose appropriate technologies.

Nevertheless, investment in the industrial sector was expected to increase substantially. Most of this investment was earmarked for a small number of large projects - thirteen projects would absorb 53.2 per cent of total investment in industry over the ten year period, both in the traditional areas of industrial activity (textiles, beverages, and food processing) and basic industries. Direct foreign investment, particularly in export oriented industries and those using complex technologies, was to be encouraged through the Joint Venture Proclamation of 1983.

Efforts would be made reduce import dependence through more efficient handling of imported goods, the introduction of procurement services and import substitution wherever possible. The planned structural change within the industrial sector would, it was hoped, ensure that the industrial sector would make greater use of domestic resources, basic industries would supply a larger proportion of intermediate goods and the continued expansion of consumer oriented industries would ensure further import substitution of finished goods. Meanwhile, manufactured exports were expected to increase by almost 300 per cent by the end of the plan period. Much of this increase would come from increased exports of leather, food products and textiles, though the government hoped to diversify manufactured exports by investment in plants producing specifically, or in large part, for the export market.

Small-scale industry was to be encouraged by the promotion of cooperatives and HASIDA's activities as a specialist arm of the MOI. Centralisation of resource allocation and licensing would enable the Ministry to fully integrate small-scale industry with the public sector enterprises.

Both the objectives and strategies of the TYPP were carried over to TYDP (FY1987-FY1989) and FYDP (FY1990-FY1994), though the emphasis changed somewhat towards the promotion of exports and employment generation. Although satisfaction of the population's basic needs remains the priority, the expansion of manufactured exports has become a necessity if the government is to alleviate the acute foreign exchange shortage induced by a sharp decline in earnings from coffee and rapidly growing debt servicing obligations. This is to be achieved by the increasing the allocation of foreign exchange and inputs to exporting enterprises and, to a lesser extent, the development of export oriented

industries. One option currently under consideration is the development of an Export Processing Zone which would attract direct foreign investment in export oriented industries such as garment manufacture.

Realising that large-scale public sector industrial projects had made a limited contribution to employment generation in urban areas, where unemployment is increasing steadily (see Section 5.1), the government introduced institutional reforms and a package of incentives to increase private sector investment. Greater freedom was to be given to entrepreneurs to identify and implement projects. In the plan, however, the private sector was to operate within a central planning framework. Most of its inputs and all foreign exchange were to be allocated by the government.

It is unclear whether the TYPP can still be regarded as a valid planning tool for the industrial sector following the economic reforms proposed at the March 1990 WPE Congress. Industry will be one of the key areas for private sector investment and the public sector's role in the establishment of new industrial enterprises and - possibly - in the management of some existing large-scale enterprises will be curtailed. Inevitably this will entail some revision of the government's investment programme, to reflect changing financial resources and Ministry of Industry priorities. Moreover, in the market system, planning is likely to assume an indicative role, with prespective directives playing a far less important role in both the day-to-day management of the industrial sector and the development of its investment strategy than they have in the past. Even so, industrial planning is essential if the government is to redress the structural imbalances within the industrial sector.

Within the framework of a market oriented system, the government may be able to direct private sector investment towards preferred projects by providing detailed feasibility studies. It is clear that one of the weaknesses of the private sector at present is its inability to develop and implement innovative project proposals. The government - which has considerable experience in this field - could bring its experience to bear. It should not be forgotten, moreover, that the government will continue to play a major role in the industrial sector. State owned enterprises already dominate the industrial sector and new state owned enterprises are planned. While, the emphasis will be on profitability, the government may be willing to accept a lower rate of return than private sector entrepreneurs that will enable it to participate in branches of the economy unattractive to the private sector. The public sector may also work in tandem with private capital through the formation of mixed enterprises. The experience of the former People's Democratic Republic of Yemen in establishing mixed ownership enterprises indicates that government participation in a project can attract private capital. This may also be a means

by which the government can direct private sector investment into key activities. Incentives and hidden subsidies should be eschewed.

Although plan documents have specified both medium and long-term sectoral objectives and strategies, there is little evidence that such plans have been formulated at branch level. Branch level plans are essential if the industrial sector is to develop rationally - by avoiding duplication - and if the sector is to take advantage of opportunities for linkage. The priority given to large scale projects means that branch level planning is, of necessity, a long term exercise. However, recent measures to promote small-scale enterprises will mean that project lead-times will become significantly shorter in the near future. Consequently, medium-term branch level plans will become an increasingly important planning tool and may provide the means by which the government can achieve a rapid evolution of the manufacturing sector. Technical assistance could be considered in this field.

4.2 The institutional framework for industrial development

Until March 1990, Ethiopia was a centrally planned economy. Radical reforms which would transform the economy into a market oriented model have been proposed, some of which have been introduced. However, in this transitional stage the central planning framework remains in place and is likely to do so for some time to come as the reform package is introduced on a piece-meal basis.

Under the system in place until March 1990, the distribution of resources for investment and production was determined by the Office of the National Committee for Central Planning (ONCCP) on the basis of targets agreed between the ONCCP sector departments and the executing Ministries. These targets are embodied in the country's Ten Year Perspective Plan (TYPP) and medium-term planning documents. In many respects the ONCCP operated as a clearing house: allocating foreign exchange and other scarce resources to public institutions on the basis of sectoral budgets and forecasts agreed with executing Ministries. Project implementation was the responsibility of the executing Ministry but all projects were appraised by ONCCP, which must approve any change in project specifications. The ONCCP also directed the marketing and distribution of industrial products by assigning each corporation to a distribution agency, following negotiations with the Ministry of Domestic Trade, and formerly held overall responsibility for the determination of prices (now vested in the Price Studies and Policy Institute; see Section 4.3).

By acting as a co-ordinating agency ONCCP discouraged direct contact between Ministries and promotes the administrative segregation of economic activity between the executing authorities. This handicapped the formulation of strategies to develop inter-sectoral linkages within each Ministry and the identification of suitable projects. In the industrial sector this problem was aggravated by difficulties of co-ordinating a sectoral development strategy where responsibility for industrial enterprises is dispersed between several Ministries. According to a FY1986 Central Statistical Authority (CSA) survey, 50 of the 262 Industrial Public Enterprises (IPEs), accounting 28 per cent of MVA, were under the supervision of Ministries other than the Ministry of Industry. The Ministry of Industry's responsibility for private sector industrial enterprises was, moreover, indirect, executed through the Handicrafts and Small-Scale Industries Development Authority (HASIDA).

The Ministry of Industry (MOI) supervises the operations of eleven industrial Corporations and four share companies, formulates industrial development strategy and supervises the implementation of industrial projects. The Planning and Programming Department within the Ministry's Industrial Development Section identified prospective industrial projects on the basis of the sectoral

development plan agreed with the ONCCP, branch level surveys, recommendations of Corporation management - based on their own planning units - and recognised shortages of consumer and intermediate products. A feasibility study was commissioned by the Corporation or MOI and then submitted to the ONCCP project assessment department before inclusion in the capital budget, which defined the Ministry's annual investment budget ceiling. The MOI then selected individual projects on the basis of its investment priorities (see Section 4.1) and negotiated financing through the Agricultural and Industrial Bank (AIDB) and/or a foreign credit source. In those cases where foreign funding was used, the Office for the State Committee for Foreign Economic Relations (OSCFER) participated in contract discussions and the contract was approved by the State Committee. The Corporation and IPE were directly involved in the implementation of the project, though under the close scrutiny of the MOI, ONCCP and OSCFER. Before any change could be made to the project specifications the approval all these authorities had to be secured. Inevitably, given these cumbersome procedures, there were long lead times in project implementation, sometimes as long as two years between the application for and delivery of equipment. Moreover, the intervention of the ONCCP and MOI effectively took the investment decision out of the enterprise manager's hands.

Formerly feasibility studies were undertaken or commissioned in-house by the Industrial Projects Service (IPS), but in 1987 IPS was transferred to the Development Project Studies Authority (DEPSA). DEPSA acts as an independent consulting service, reporting direct to the Planning and Research Branch of the Council of Ministers but financed by commissions from Corporations, with three specialist departments preparing feasibility studies of industrial, agricultural and infrastructural projects. It was formed in order to streamline the implementation of the government's development plan, develop a national feasibility studies and project implementation capability and thereby reduce dependence on foreign consultants. The IPS is most experienced department, with a staff of thirty, half of whom are engineers and half economists. With technical assistance from UNIDO^{16/} the IPS developed a set of project evaluation parameters and expanded its capacity to 7-10 pre-feasibility studies, two sub-sectoral surveys and the implementation of two projects per year. Project appraisal includes detailed market and technical analyses and economic evaluation using border prices and accounting prices for such inputs as labour and foreign exchange. While the IPS hopes to expand its capacity to 13 pre-feasibility studies, four sectoral surveys and the implementation of five projects in FY1990, this is well below the current demand for such consultancy services and the coverage of proposed investment projects is still far from complete. Given the

16. UNIDO, Assistance to Industrial Projects Service (IPS), DP/ETH/83/001.

industrial sector's dependence on foreign financing and the shortage of investment resources the expansion of the IPS's capacity merits further technical assistance. Of particular importance is the enhancement of the IPS's capability in the field of project implementation and monitoring, from tender document preparation to the supervision of commissioning, trial runs and appraisal.

Under the terms of the "Public Enterprises Proclamation" (No.20/1975), the MOI exercises the ownership function over Industrial Public Enterprises on behalf of the state. It is empowered appoint the general manager of each Corporation, approve the Corporation's budget, capital expenditure and work programmes, establish a reserve fund and issue directives to ensure the Corporation's proper management. Through its Industrial Operations Division, the MOI supervises plant and Corporation activities by studying and revising their annual manpower and capital expenditure plans, setting production and sales targets, and reviewing financial and foreign exchange budgets. It also determines the allocation of resources between corporations. Furthermore, the MOI defines management procedures, participates in the identification of appropriate product prices and marketing channels, and determines the product mix and specifications. The Corporations regard the degree of control exercised by the MOI as incompatible with the management autonomy accorded by Proclamation No.20/1975 (see Section 4.3).

Since 1984, the fifteen regions have been grouped into eight planning zones, each of which has a regional planning office reporting to the National Committee for Central Planning. The fifteen regions are divided into 102 awrajas which in turn comprise 586 woredas. Each of these administrative units has a Development Council with an executive committee including representatives from the Ministries of Agriculture, Commerce and Industry. While the regional, awraja and woreda planning bodies provide information to higher planning institutions to assist in the formulation of national policies, the flow of policy and the framework for action is top-down, based on directives that filter through the planning structure from the National Committee. Consequently, there is little regional autonomy in the planning process, even though both regional and district planning authorities prepare their own plans. Within this planning structure, the requirements of regional development are inevitably subordinated to the interests of national development.

The Ministry of Industry's efforts to disperse industrial activity have been ad hoc; regional planning was simply a matter of industrial location - the location of projects selected on the basis of national development criteria - little attention was given to development of a regional economy. There has been a tendency for the MOI to give undue weight to economies of scale in its search for efficiency, by developing large-scale projects

catering for a national market rather than small-scale enterprises catering for discrete regional markets. This has ignored the extremely high costs of distribution and the logistical problems caused by Ethiopia's poor transport system. Projects that could be based in rural areas were favoured but little consideration was given to the opportunities for local linkages and the development of an integrated economic structure. The Corporations' reluctance to sub-contract to small-scale private sector enterprises and the preference for internal, vertical linkages has meant that intermediate goods are frequently transported a great cost from the main industrial centres to distant provinces.

Small-scale private sector investors may be able to take advantage of the dislocation of the national economy by establishing enterprises that do cater for regional markets. This is particularly true of light-consumer industries. Under a market system, therefore, a greater dispersion of industrial activity may be expected. This will not necessarily correspond to regional development, since the industrial structure is likely to remain truncated. Development of a broader industrial base in Ethiopia's regions will still depend on government intervention, either through the establishment of public sector enterprises or indicative planning.

Since 1987, overall authority for standardisation and metrology has been vested in the Ethiopian Authority for Standards (EAS) which reports directly to the Council of Ministers. In addition all of the Corporations have quality control departments, supervised by the quality control service within the MOI, and export products are quality checked by the Ministry of Foreign Trade. The implementation of standards and systematic quality control has already brought benefits such as the withdrawal of dangerous products from the market, an increase in the price of exported hides and skins and the introduction of price differentials for different quality metal products. However, the coverage remains incomplete. EAS has issued only 389 mandatory standards and the MOI supervises 281 standards of its own which will soon become statutory. There remains considerable room for improvement in the procedures of quality control of raw materials, intermediate and finished goods at plant level. This will demand the preparation of new standards, additional metrological facilities and the technical assistance.

The Handicrafts and Small-Scale Industry Development Agency (HASIDA) was established in 1977 as an autonomous agency under the MOI, to promote, support and co-ordinate the development of private sector handicrafts and small-scale industries in Ethiopia. One of HASIDA's principal functions is to licence new SSI projects. It also allocates foreign exchange on behalf of the National Bank of Ethiopia and provides letters of authorization for SSIs to purchase scarce raw materials from the state distribution agencies at controlled prices. These functions give the agency considerable

authority and ensure that it is in regular contact with most of the enterprises under its supervision.

Besides its supervisory and co-ordinating roles, HASIDA provides support services to SSIs. The Ethiopian Handicrafts Centre (EHC), employing 214 persons in 1988, comprises several traditional handicraft workshops (manufacturing carpets, garments, jewellery, weaving, bamboo, silkscreen prints and textile dyeing) which provide training, demonstrations and manufacture prototypes besides producing handicrafts for the export market. Efforts have also been made to upgrade production and managerial techniques in the "modern" sector.

A Technical and Engineering Extension Department (TEED) provides support services in the fields of training plant design, equipment selection, the design and production of tools and spare parts. TEED operates a foundry, a metal workshop and a wood workshop manufacturing tools and spare parts, repairing machinery and providing short training courses for SSIs and cooperatives (see below). In 1987 TEED trained 54 persons and provided in-plant consultancy services at 22 SSIs. Training is also provided by eight mobile workshops which tour rural areas. HASIDA plans to expand these services though, notwithstanding assistance from UNIDO¹⁷, their development is still constrained by a shortage of personnel and equipment. Management training is still rudimentary. An Industrial Promotion Department (IPD) was established in 1987. It has set up a number of short courses in book-keeping and management, produced some manuals and provided limited consultancy services but the number of staff available is quite inadequate for the massive task of providing basic managerial skills to a largely unskilled audience. Given the limited formal training of private sector entrepreneurs and technicians the expansion of these support services should be encouraged.

In line with government policy to promote the collective ownership of the means of production, HASIDA encourages artisans and workers in SSIs to join cooperatives. These institutions are regarded as an efficient method of channelling support services, a means of promoting new relations of production and improving productivity through the bulk purchase of materials, the upgrading of production technology and a stronger market position enjoyed through association. They are seen as the principal tool for the transformation and development of SSIs. Cooperatives are co-ordinated and supervised by HASIDA's Cooperative Promotion Department, which helps cooperatives develop standardised managerial procedures and provides free consultancy and auditing services.

17. UNIDO, Handicraft and Small-Scale Industry Development, DP/ETH/77/018 and Handicraft and Small-Scale Industry Development (Phase II), DP/ETH/83/012.

Cooperatives usually have priority over unorganised SSI's when HASIDA allocates raw materials (virtually all HASIDA's allocation of cloth, for example, is distributed to tailoring cooperatives) and foreign exchange as well as preferential access to HASIDA's support services. They also benefit from tax exemptions and a preferential interest of 6 per cent for bank loans. These incentives have encouraged the rapid growth in the number of cooperatives from 470 in 1978 to 852 in 1987.

Service cooperatives predominate (Table 4.3). These associate members for the bulk purchase of inputs and access to credit. The means of production remain in private hands and levels of capitalization are low. Products may be sold collectively or by the individual. Service cooperatives are regarded as a step towards the development of producer cooperatives in which the members pool their resources - capitalization levels are about four times as high as in service cooperatives - and are paid on the basis of the quantity and quality of their products. They operate as small factories under the direction of an elected manager. Members receive dividends from the cooperatives net profits. On average profits amount to about 7 per cent of turnover. At present about 40 cooperatives are in transitional phase, operating as producer cooperatives but without formal registration as such.

Table 4.3: Membership and capital of service and producers' cooperatives, 1987

Trade	Service Cooperatives			Producer Cooperatives		
	No.	Members	Capital per member	No.	Members	Capital per Member
Handicrafts	705	31,725	1,273	92	4,192	4,397
Industrial	41	764	2,600	14	365	9,357
Total	746	32,489	1,304	106	4,557	4,794

Source: Based on Table A-0.

Initially, priority was given to the development the rapid growth of handicraft cooperatives, building on existing skills. In 1987 97 per cent of the co-operative members worked in traditional fields, 52 per cent in tailoring and 36 per cent in weaving (see Table A-0). New products and skills have gradually been introduced in order to transform handicrafts into industrial cooperatives. Tailoring cooperatives, for instance, have been encouraged to produce ready-to-wear garments. Cooperatives have been formed to produce mattresses, packaged food and candies. Others have been trained and helped to purchase equipment on a joint-venture basis with HASIDA to establish pilot industrial cooperatives for the manufacture of sheet metal goods, forged products and textile items. For the first few years these cooperatives work under the supervision of a HASIDA appointed manager but once the capital has been repaid they will function as producer cooperatives. Other cooperatives are expected to imitate their methods, thereby gradually upgrading the technology and production methods employed within the cooperative sector.

The government's proposed reforms may eliminate the incentives accorded to cooperatives as the economy moves towards a market system. The reforms also provide for a cooperative's members to dissolve their association if they see fit. Under these circumstances the cooperative movement may find its membership declining in the near future. While cooperatives have had tended to disappear in industrialised countries, they have been successful in market oriented developing countries where suitable forms of association have been devised. Flexibility will be the key to their survival. For many small-scale industries cooperatives provide a useful means of securing bulk inputs and joint marketing strengthens their members' market position. Even though many artisans and small-scale businessmen prefer to market their goods individually, the benefits of association on the supply side may persuade their members to retain the cooperative structure, albeit in revised form.

The Ethiopian Chamber of Commerce established as an autonomous body under the Ministry of Foreign Trade under Proclamation No.148/1978, operates as a co-ordinating institution for ten city Chambers' of Commerce, with 52,000 members (membership is mandatory for all incorporated institutions), and is funded out of contributions from their budget. Its activities include the collation of statistical information sources, dissemination of government policies, publication of journals and trade directories, translation services, contact with chambers abroad, participation and organisation of trade fairs, assistance in finding export markets, issuing of the certificate of origin, advice on product design, arbitration and the preparation of studies on trade constraints. The Chamber, and its regional members, also provide half-day training courses in such fields as accounting, sales, marketing and administration which are attended by 1,000 members annually. Recognising the limited opportunities

open to the private sector for managerial training, the Chamber plans to strengthen its training capacity in the near future. This may merit technical assistance.

At present the Chamber has little role in the formulation of policy, despite its close links with the private sector. The Chamber could, however, be developed as feedback channel from the private sector to the Government in the implementation of its investment promotion policies by increasing the institutions participation in policy formulating committees. Frank discussion of the legislative and institutional constraints on the private sector is more likely within the framework of an autonomous body than through the limited contacts between the private sector entrepreneurs and Ministries.

Financial institutions

Domestic banks provided 22 per cent of the capital for investment in the IPEs in the period FY1984 to FY1988. Medium and long term credits (not longer than 15 years) for investment in agriculture and industry are provided by the Agricultural and Industrial Development Bank (AIDB). Although AIDB has been entitled to accept deposits from public enterprises since July 1986 it does not presently do so. Its loans are largely financed through credits from the National Bank of Ethiopia (NBE), though AIDB has also received lines of credit

Table 4.4: Loans approved by the Agricultural and Industrial
Development by Bank sector, 1983 to 1987
 (Million Birr)

Sector	1983	1984	1985	1986	1987	Percent 1983-87
Agriculture	438.4	509.0	516.4	141.7	400.1	88.8
Industry	15.4	60.3	14.1	25.2	25.2	6.1
Other	19.1	12.8	0.4	9.2	74.1	5.1
Total	473.0	582.2	530.9	197.9	499.4	100.0

Source: AIDB, Annual Report, 1985 and 1987.

Table 4.5: Agricultural and Industrial Development Bank loans approved by industrial branch and scale, FY1986 and FY1987

Branch/scale	No.	Birr'000	Percent of No.	Percent of value
Food	17	39,978.7	33.3	23.6
Textiles	7	38,525.5	13.7	22.7
Leather & shoes	6	3,509.9	11.8	2.1
Fibrework	1	1,000.0	2.0	.6
Printing & paper	2	453.3	3.9	.3
Chemicals	3	789.0	5.9	.5
Metalwork	2	694.4	3.9	.4
Wood work	2	754.0	3.9	.4
Others	17	83,911.8	33.3	49.5
Total	51	169,626.5	100.0	100.0
Medium & large scale	18	162,450.4	35.3	95.8
Small scale	39	7,256.1	76.5	4.3

Source: AIDB, Annual Report, 1985 and 1987.

from the ADB, EIB and IDA. About 90 per cent of the loans approved by the AIDB in the period 1983-87 were allocated to the agricultural sector. Industry's allocation over this period was Birr140 million, just 6 per cent of the total (Table 4.5). Within the industrial sector the majority of the loans approved have been small-scale credits (less than Birr500,000) to cooperatives and SSIs. A small number of medium and large-scale projects have, however, absorbed the majority of the funds. In the period FY1985 to FY1987, 18 projects were allocated 95 per cent of the credits approved and one project, the Lega Dembi Gold Mine, received nearly 40 per cent of the total.

While the number and value of loans approved for medium and large scale industrial projects is low compared with allocations to the agricultural sector, this reflects the limited number of viable projects presented as much as a shortage of funds. The Bank does not operate a sectoral credit allocation policy. All of the loan requests presented by the Corporations through the MOI are accepted if the project feasibility study indicates that the investment will yield and 10 per cent internal rate of return. Where necessary, AIDB will undertake its own financial feasibility study, though its capacity for carrying out such assessments is limited.

Despite AIDB's attempts to weed out unviable projects, the bank suffers from a high proportion of unserviced debts. In July 1989, the accumulated arrears of principal and interest payments owed by IPES amounted to Birr88 million on an outstanding principal of Birr167 million. This situation represents a misallocation of resources, threatens the financial viability of the bank and impairs its creditworthiness. AIDB has tried to tighten its control of credit and enforce repayment, by, for example, refusing to grant new loans Corporations supervising plants in arrears, but it has little authority over bad creditors. Some of these debts are now chronic and will probably have to be written off. One means of increasing the AIDB's control over its capital would be to allow it to invest in equity as well as grant loans. This would be particularly attractive in the case of joint ventures. Stricter financial guidelines for both the bank and IPES could also be considered.

The massive borrowing and poor debt servicing record of IPES has not significantly impaired their access to credit since their applications are backed by the Ministry of Industry. However, it does threaten to crowd-out SSIs. Nevertheless, the immediate restriction on disbursements to SSIs is institutional. The majority of SSI and co-operative projects are self-financed but 176 SSIs applied for AIDB loans in FY1987, 100 in FY1988 and 110 in FY1989. Loans were approved for less than 15 per cent of the applicants. AIDB accepts applications for loans based on crude outlines of a project proposal and documents proving that the applicant holds fixed assets valued at 25 per cent of the loan as collateral. It then undertakes detailed feasibility studies of the project, free

of charge. Owing to the limited capacity of the project assessment department in the head office (eight staff) and five regional offices (five other offices send applications to the head office), applicants face considerable delays before a loan can be granted. AIDB hopes to increase the number of staff carrying out feasibility studies and simplify the procedures so that the number of project studies can be increased. This will require technical assistance. AIDB has also encouraged applicants to use a small but growing number of private consultants.

About 60 per cent of SSI borrowers default frequently and approximately 10 per cent are referred to the banks legal department - a marked contrast to the generous treatment of public sector defaulters. Bank staff try to diagnose and resolve the operational difficulties of borrowers through site visits and informal consultancy services. This places a heavy demand on its manpower. Ultimately the SSI department within AIDB will only be able to fulfil its role as a banking institution if it restricts its services to project assessment. Other services could better be provided by support institutions within HASIDA.

Short term credits for working capital are provided by the Commercial Bank of Ethiopia (CBE). The CBE finances its loan portfolio from demand, savings and time deposits. Over half the outstanding short term credit is allocated to the foreign and domestic trade sectors (Table 4.0). Industry's share is relatively small (12.6 per cent) and remained relatively stable over the five years to FY1988.

Liquidity constraints in the public sector - resulting from losses and the appropriation of all but 5 per cent of the operating surplus by the Ministry of Finances - compel the corporations to rely heavily on short-term financing for their working capital. The ratio of short term loans to long term loans from domestic banks (as indicated by the consolidated balance sheets of all MOI corporations) has increased from 1.4 in FY1984 to 1.8 in FY1987 and 2.2 in FY1989. CBE provides these credits either as term loans which are repaid by instalments or as an overdraft facility which is repaid as a lump sum at the end of the year. Interest is charged on both types of loan at the same rate. In practice, both the corporations and the CBE regard overdrafts as credits which will not be redeemed or serviced. Although the CBE is reluctant to extend credit to loss making enterprises and the application procedure requires both Corporation and MOI approval, the total value of outstanding short term credits has grown steadily (Table 4.6).

Table 4.6: Sectoral distribution of outstanding Commercial Bank of Ethiopia credit, 1983 and 1988
(Million Birr)

Sector/branch	1983		1988		Percent change 1983-88
	Birr	Percent	Birr	Percent	
Agriculture	44.9	4.6	71.6	5.5	59.5
Industry	122.4	12.6	164.0	12.6	34.0
- Food & beverage	(19.6)	(16.0)	(23.8)	(14.5)	21.4
- Building materials	(8.8)	(7.2)	(24.8)	(15.1)	181.8
- Leather & shoes	(24.0)	(19.6)	(6.7)	(4.1)	-72.1
- Printing & paper	(14.8)	(12.0)	(5.8)	(3.5)	-60.8
- Textiles	(24.4)	(19.9)	(39.3)	(24.0)	61.1
- Others	(30.8)	(25.2)	(63.6)	(38.8)	106.5
Domestic trade	187.9	19.3	247.4	19.0	31.7
Foreign trade	390.2	40.1	486.0	37.3	24.6
Others	227.3	23.4	333.2	25.6	46.6
Total	972.7	100.0	1,302.2	100.0	33.9

Source: Commercial Bank of Ethiopia, Annual Reports, various issues.

The private sector is even more dependent on short-term credit than the Corporations. About two thirds of the loans for industrial projects disbursed by the CBE are granted to the public sector and one third to the private sector and individuals (Table 4.7). In FY1985 the ratio of CBE to AIDB disbursements to private industry was 10.3:1. Although this fell to 4.3:1 in FY1987, largely because of a decline in the value of CBE disbursements, it indicates considerable over-dependence on short term finance. This situation arises because short term credit from the CBE is more accessible than longer term credit from the AIDB. CBE loans are smaller - covering working capital or replacement costs - than those advanced by AIDB. The bank management examines only the assets and liquidity position of an enterprise, which is usually a depositor, before granting a loan. It does not demand a full feasibility study.

Table 4.7: Commercial Bank of Ethiopia loan disbursements to industrial enterprises by ownership, FY1983 to FY1988
(Million Birr)

Ownership	1983	1984	1985	1986	1988	Percent	
						Percent 1983-88	change 1983-88
Public enterprise	45.2	42.0	44.7	37.4	29.4	64.1	-35.0
Cooperatives	.3	.3	.2	.4	1.2	.8	300.0
Private	25.1	26.7	23.0	18.2	15.6	35.1	-37.8
Total	70.7	69.0	67.9	56.0	46.2	100.0	-33.9

Source: Commercial Bank of Ethiopia, Annual Reports, various issues.

One of the main problems facing the banking system is the growth of non-servicing short term loans. This threatens to crowd out profitable enterprises by depriving the CBE of funds, a situation aggravated by the transfer of funds from the CBE to the NBE to finance the central government deficit (CBE's credit:deposit ratio has fallen from 0.59 in FY1982 to 0.36 in FY1988). There has been a 34 per cent decline in the annual value of disbursements to the industrial sector over the period FY1983 to FY1988 and this trend is likely to accelerate in the near future.

Interest rate policy has tended to be inflexible, with infrequent adjustments to take account of inflation. Where interest rates have been adjusted these have tended to favour creditors rather than depositors. Over the 1980s as a whole interest rates have barely kept pace with inflation. Inevitably this has discouraged saving. A balance must be kept in which interest rates realistically reflect the demand and supply of money if saving is to be encouraged and resources are to be allocated efficiently.

Differential interest rates are applied to encourage investment in priority areas and projects under collective ownership. Since July 1986, when interest rates were reduced across the board to promote investment, borrowers investing in agricultural projects or importing agricultural inputs have been the most favoured with rates of 5, 6 and 7 per cent for cooperatives, state and private enterprises respectively. The prevailing interest for private sector commercial borrowing was set at 9 per cent (9.5 per cent for domestic trade and importing, but 8 per cent for transport and communications and 6 per cent for exporters). Private sector investments in industry are subject to the full commercial rate while public sector corporations benefit from a rate 8 per cent and cooperatives pay 6 per cent on loans for equipment and 4.5 per cent on loans for construction.

Plants that export more than 70 per cent of their output and are borrowing money to finance production of export goods may also benefit from a preferential rate of 6 per cent. Currently, the only enterprises borrowing at the exporters' interest rate are tanneries but there are plans to relax the definition of exporter and streamline the application procedure to facilitate access to working capital for other companies.

As part of the package of incentives to promote private sector investment the government intends to bring the interest rate charged to private sector investors into line with the public sector rate. This may involve a complete overhaul of the structure of interest rates. Ideally, a unified base rate should be applied to eliminate the distorting effect of implicit sectoral subsidies.

At present, potential sources of capital outside the banking system are not available to the industrial sector. Neither the

Ethiopian Insurance Corporation (EIC) or the Pension and Social Security Authority (PSSA) invest in stocks or bonds. Their assets are deposited with the CBE and the Housing and Savings Bank (HSB). Recent initiatives in the field of joint ventures and domestic investment in small-scale enterprises may be an opportunity for them to diversify their portfolios. Under the terms of Special Decree No.17/90, which permits the establishment of share companies, this may now be possible. Institutional investment by banking and other financial institutions would give a much needed capital injection to the industrial sector. This may also be desirable from a managerial point of view since financial institutions will be able to exert pressure on enterprise management - particularly in the public sector - to tighten up management practices. However, there may be some resistance to this form of investment on the part of the National Bank of Ethiopia which has, in the past, used savings mobilised by banks and other financial institutions to finance central government budget deficits.

In the absence of an established stock-market and public recognition of this form of saving, it may prove difficult to mobilise private-sector savings through flotations and share issues. However, share issues have proved an effective means of raising capital for mixed-sector enterprises in the former People's Democratic Republic of Yemen. These issues have been preceded by careful advertising and the value of the stock has been tailored to fit the pocket of the targetted market, migrant workers. Where the face value of the stock has been too high, issues have failed. Some compromise has to be reached between minimising the administrative costs of a share issue and maximising the capital raised by a flotation. Public interest in stocks and bonds will also reflect potential dividends rather than capital growth since, if the primary market is thin the secondary market will be thinner still. In order to attract investors, companies may be forced to offer a dividend guarantee. Banking institutions, the obvious intermediary, will need technical assistance if they are to manage flotations and share issues effectively. Furthermore, since public confidence is essential if this form of saving is to be expanded, a "watch-dog" institution should be established to protect the interests of investors. Special Decree No.17/90 announced the formation of an Investment Committee, chaired by one of the Deputy-Prime Ministers, which could fulfill this role.

Although Special Decree No.17/90 did not rule out the establishment of private sector banking institutions, it did state that such institutions would have to be approved by the Council of Ministers. Obviously, banking institutions should be subject to close scrutiny, exercised on a day-to-day level by the National Bank of Ethiopia. However, the development of private sector banks should be considered in the near future. Properly regulated, such institutions may be able to expand the network of bank branches into rural areas, thereby mobilising additional savings. They may

also be able to provide specialist services unavailable or inadequately catered for by the existing institutions, particularly in the fields of international commerce and investment banking.

4.3 Current policy issues and initiatives

Public sector management

The MOI exercises the ownership function over Industrial Public Enterprises on behalf of the state through its Industrial Operations Division. Under the terms of the "Public Enterprises Proclamation" (No.20/1975) the Minister of Industry is empowered to appoint the general manager of each Corporation, approve the Corporation's budget, capital expenditure and work programmes, establish a reserve fund and issue directives to ensure the Corporation's proper management. Corporation general managers, in turn, hold similar powers in relation to each plant under their supervision. However, these plants are, in themselves, legal entities under the terms of the "Regulation and Co-ordination of Public Financial Operations Proclamation" (No.163/1979) and for financial purposes they are the irreducible element of public sector management. The Corporation is, for instance, financed by contributions from the individual plants and taxes and supplementary charges are levied at plant not Corporation level. In theory, this enables the plant management to contract loans and invest its liquid assets without Corporation management approval. In practice, the contradiction between the legal autonomy of the Corporations and individual plants in Proclamations No.20/1975 and No.163/1979 is resolved by an informal arrangement between the Corporations and the Ministry of Finance. It seems expedient that this arrangement should be established on a legal basis as soon as possible, thereby providing a statutory framework for the Corporation management model.

Ministry control is exercised through regular budgets, reports and budget audits. Each corporation scrutinises and compiles the production and sales targets, manpower demands, financial budgets, foreign exchange requirements and proposed capital expenditure submitted annually by each plant under its supervision. These are then passed on to the MOI's Budget, Manpower and Finance Departments, which may ask the Corporation to justify any change in performance indicators inconsistent with submissions in previous years. Finally, a comprehensive Ministry Budget is submitted to ONCCP for further study and final approval. This procedure blurs the structure of management authority, providing for both Ministerial and Corporation intervention in management decisions taken at the plant level. It is also rigid, since there is little opportunity to change production targets or budgetary allocations once the financial year has begun, even though the plants have to submit their budgets and supporting forecasts about five months before the new financial year in order to meet ONCCP deadlines. Furthermore, it is time consuming, requiring the Corporations and Ministry to reallocate staff from other duties for several months of the year. While Ministerial scrutiny of corporate plans is compatible with its ownership function, a balance should be achieved which allows management to formulate and

implement its own development strategy and take full responsibility for its decisions.

Although Proclamation No.5/75 grants the Corporations legal autonomy and vests executive power in its general manager, day-to-day Corporation and plant management is also closely supervised by the MOI. Directives, supported by manuals, determine managerial policy and procedures in every field: purchasing, marketing, maintenance and accounting for instance. Given the shortage of skilled management staff, Ministerial guidelines and manuals are a useful tool. But, as directives, they are also a straight jacket which inhibits the development of new management techniques (other than those proposed by the MOI's Organisation, Methods and Systems Department). Moreover, the MOI makes many of the decisions that could be left to plant or Corporation managers. While the Corporation management may be consulted about marketing and distribution, the MOI and ONCCP make the final decision about the appropriate channel. Product mix and quality are also determined by the MOI in the final instance, so too are prices (see below).

Managerial autonomy is further circumscribed by the limited financial resources retained by the Corporations. Under Proclamation No.163/1979 each plant pays a capital charge of 5 per cent on the value of the paid up capital before nationalisation and the general reserves, no account being taken of the depreciation of plant or accumulated losses at the time the proclamation was promulgated. This charge is deductible before tax. Corporation tax is payable at a flat rate of 50 per cent on the profits of IPEs. Enterprises may make a contribution to the Corporation's general reserves amounting to no more than 10 per cent of the their residual surplus as long as the general reserves are no more than 30 per cent of the state capital. The balance must be submitted to the Ministry of Finances within 6 months of the end of the fiscal year. Thus, the total retained earnings of IPEs amount to no more than 5 per cent of net profits.

Taxes, capital charges and residual surplus transfers from IPEs earned the Treasury Birr213 million in FY1988 and an estimated Birr152 million in FY1989. Over the past decade these payments have drained the profitable IPEs of potentially investible funds and mopped up liquidity, leaving them dependent on allocations from the central government budget and short-term bank financing (see Section 2.5). They have also prevented transfers between profitable and unprofitable enterprise within each Corporation which would enable them to reduce debts and the drain of scarce resources through interest payments.

IPEs also suffer from ill-defined managerial objectives. From the government's point of view, IPEs contribute to many aspects of economic and social development: they are seen as tools of social transformation by creating new work ethics, a means of improving social well-being by the maximisation of production at minimum

cost, a major employer, the vanguard of technological progress, the foundation of regional economic development and a source of revenues for the state budget. These objectives are impossible to reconcile and a source of confusion in the development of a management strategy. Profit maximisation and the rational use of resources are, moreover, low down on the MOI's list of priorities. Production targets set goals in terms of gross output and production value, which are reinforced by the incentive system at the shop floor (see Incentives below). This discourages managers from introducing new products and reducing costs. Besides, plant and Corporation accounts departments collect and present data in a format appropriate for submission to the MOI budgetary departments not for cost assessment by plant managers. In particular, management is not supplied with data in the form of cost ratios that would allow it assess the performance of different products and departments.

In the package of economic reforms presented to the Central Committee of the Workers' Party of Ethiopia, the government made it clear that IPEs would no longer be required to sacrifice profitability and efficiency to social objectives. Indeed, profitability and productivity were to become the sole criteria of IPE success. Those enterprises that were unable to operate profitably would be sold or closed. At the same time, a thorough review of Proclamations No.20/1975 and No.163/1979 is under way with a view to resolving the contradictions with the body of legislation, better defining the role and accountability of managers and the supervisory function of the MOI, and reforming the taxation and supplementary charge regime so that enterprises can retain a larger proportion of their profits. Such reforms will, however, have to be accompanied by improved management training to help plant managers evaluate performance and modify production methods. This will be crucial to the success of IPEs once a market system is established.

Ethiopia suffers from a shortage of trained and experienced managers within the public sector as it is, but this problem is compounded by fact that virtually none of the managers currently employed by the public sector have little or no experience of working in a market oriented, competitive environment. Nor is the management structure suitable for a market oriented system. Departments crucial to the success of enterprises in a market oriented system are poorly developed -marketing and public relations for instance. Very few of the enterprises currently prepare costings on a product by product, departmental or input basis.

There can be no doubt that the internal management of the public enterprises will have to be radically restructured if they are to perform effectively in the future. In most cases this type of restructuring will have to be undertaken by consultants hired from abroad, since such expertise simply is not available within Ethiopia - a number of small consultancy firms have been

established but these cater mainly for small-scale enterprises and have little experience in the management of large-scale enterprises. Already foreign consultancy firms have entered into preliminary negotiations with the Ethiopian government to advise on the introduction of new management techniques and systems. Technical assistance at plant level will be needed in a number of fields: product design and presentation; plant layout and ergonomics; implementation of computerised accounting; preparation of input, inventory, sales, plant, product and personnel performance indicators; regular (at least monthly) assessment of these indicators and the preparation of management action programmes.

Few enterprises will be able afford such services on a commercial basis and the donor community will be called upon to assist. Owing to the considerable expenditure involved - reputable management consultants are much more costly than consultants in technical fields, with costs often exceeding two thousand dollars per man week - both donors and plant managers should undertake preliminary diagnostic studies to identify management weaknesses and needs on a plant by plant basis. Such services could be provided on at a low cost through UNDP's STAS programme, which provides experienced managerial and technical personnel on short-term contracts as volunteers.

At the same time, Ethiopia must develop a cadre of business managers. The Ethiopian Management Institute (see Section 5.1) could provide the framework for both technical training and consultancy inputs. This may be supplemented by the selective use of fellowships for MBA. programmes sponsored by donors. Donors may also be able to arrange short-term placements for managers in enterprises with a similar product profile, where they may learn the management techniques appropriate to their own enterprise. Before such options can be considered, however, a comprehensive needs assessment must be undertaken to identify factory specific needs. The Ministry of Industry is the best placed institution to carry out such a study.

Worker and managerial incentives

The low level of basic wages prevailing in Ethiopia (see Section 2.0) leaves considerable room for the improvement of productivity through incentive schemes. A small number of workers, mostly in the textile industry, are paid on the basis of piece work. The majority of workers are, however, paid wages. Under the terms of the Labour Proclamation of 1979, salaried employees earning less than Birr650 per month, about 95 per cent of all employees in FY1986, are eligible for incentive payments. A 5 per cent increment on their salary is paid if a plant achieves an increase in gross production, a 1 per cent increment for an increase in labour productivity and another 1 per cent for an increase in profitability.

When the scheme was introduced Corporations registered improved performance but most managers agree that the scheme is no longer effective. Familiarity has removed its appeal. This is partly because the bonuses, calculated annually, have no impact on weekly take-home pay. Moreover, the bonuses paid are relatively small - 5 per cent of total salaries, excluding various allowances, in FY1986 though with wide variations. The bonus system also has short-comings from the managers' point of view. It is not incremental and so does not encourage workers to push for greater production, merely to pass a threshold; it is not related to quality; management is excluded; and improved profitability is rewarded by a small bonus, putting pressure on managers to aim for increased production regardless of its effect on profit in order to reward their workers.

A review of the present incentive system could, therefore, provide public enterprises with a means of improving their performance. Such a review would have to be undertaken at a Ministry level since Corporation managers do not have the authority to implement new wage schemes and to ensure that the opportunities are distributed equitably between sectors. Whilst retaining the gain-sharing principle embodied in the Labour Proclamation for the work-force as a whole, a successful scheme might reward workers on the basis of personal performance. This is a sensitive issue requiring careful time-and-motion studies - the implementation of which would require technical assistance - and negotiation with labour representatives. Such an incentive scheme might also link bonuses to quality. The introduction of increments and assessment of bonuses on a monthly rather than annual basis, together with the inclusion of managers and bonuses for export sales might also be considered.

A note of caution: bonus schemes related to current performance, particularly profit related bonuses, create a temptation for managers to rundown their assets for the sake of immediate gain by cutting back on maintenance and replacement. This can be avoided by implementation of strict maintenance procedures.

Prices and distribution

Producer, wholesale and consumer prices of goods produced and distributed through state channels have been controlled since 1975, when the government announced a temporary price freeze (Public Notice No.18/1975). Recently, overall responsibility for the determination of prices has passed from the ONCCP to the Price Studies and Policy Institute (PSPI), which reports directly to the Council of Ministers. Under the current procedures, producer prices are determined on a cost plus basis, the approved margins varying from product to product and depending on the perceived market demand. Corporations must submit justifications - detailed cost breakdowns - for any price revision on behalf of each plant to the

MOI, usually once a year. When the Corporation's proposal is approved it will be submitted to the PSPI for further scrutiny and approval by the NCCP.

In practice, enterprise price recommendations are frequently rejected and a number of plants have been refused price revisions for more than five years. If this results in losses, the balance is made up through an annual MOI subsidy, short-term borrowing from the banking system and delayed settlements with suppliers. Strict control offers no opportunity for the plant to offset unexpected increases in input prices by a temporary rise in their product price. Similarly, enterprises are unable to offer discounts to clear excess stock. The obligation to submit all new products and modifications to the price determination procedure discourages managers from changing their product specifications. Furthermore, guaranteed margins discourage cost reduction.

Reform of the price control mechanism features in the government's new policy package. The ultimate aim is to remove the price control system altogether and allow prices to be determined by market forces. Even though proposed changes in the tariff structure and the devaluation of the Birr will undermine the price control system, the government considers that the inflationary impact of market pricing, particularly in those sectors where IPES hold monopolies or quasi-monopolies, too risky to sweep away the control mechanism at one go^{18/}. Instead, price controls will be removed in two stages as competition develops. This would have to be accompanied by measures to increase management autonomy at plant level and thereby break up the monopolies held by the Corporations. The food, leather, leather products and textile industries are considered fairly competitive and will be the first to benefit from deregulation. As import liberalisation progresses price controls will be lifted in those sectors where monopolies or quasi monopolies exist - for instance the manufacture of some metal products and sugar processing. In these industries, where domestic competition will develop slowly, if at all, competition from imports will serve as the price regulator. Price controls on basic commodities such as sugar, flour and cooking oil will be retained for social reasons. However, as the output of essential commodities increased they could gradually be added to the list of uncontrolled products. The PSPI will continue to supervise the price of essential commodities and seek to prevent monopoly rents.

18.. The impact deregulation on market prices, even those that are in short supply, is unpredictable. The removal of controls on the grain prices, for instance, led to a reduction in their price in Addis Ababa, even though the government had anticipated a price rise.

About 80 per cent of IPE output is marketed through three specialist public enterprises: the Ethiopian Domestic Distribution Corporation (EDDC), the Ethiopian Retail Trade Corporation (ERTC) and the Ethiopian Household and Office Furniture Corporation (ETHOF). EDDC has exclusive distribution contracts with most of the Corporations, though shoes and leather are sold direct to the ERTC and beverages are sold direct to private retailers by the Ethiopian Beverage Corporation. Other exceptions are those enterprises producing perishable goods, chemicals, bulky items such as cement, and a small number of plants which manufacture products EDDC has found difficult to sell. These are distributed by the Corporations themselves.

EDDC operates as a distribution agency, hiring 80 per cent of the vehicles it uses from the Ethiopian Freight Corporation (EFC) to transport products from the factory gate to its 95 regional warehouses. Retailers purchase goods from warehouses. About 50 per cent of the EDDC's turnover is sold to cooperatives and other mass organisations, 20 per cent to the ERTC and the remainder to private retailers. The EDDC buys at a fixed ex-factory price and sells at price that covers its distribution costs and a 2 per cent margin or a 10 per cent margin in the case of imported goods. Retailers' margins are considerably larger. Although ERTC prices are set by the PSPI, these allow for a 15 per cent margin on most consumer goods and up to 50 per cent on tyres and luxury products. Private traders purchasing goods from the distribution agencies at controlled prices are able to make substantial scarcity rents - 25 to 250 per cent mark ups - owing to the acute shortage of many consumer goods in government and mass-organisation stores. This is equally true of SSIs, whose prices are not controlled.

Clearly, the marketing system benefits retailers at the expense of producers. Corporations also complain that they have no contact with and so little feedback from the consumer. EDDC retorts that Corporation managers, intent on fulfilling their production targets, turn a deaf ear to their recommendations on product mix, design and quality. As a result manufacturers have been affected by the poor sales performance of some goods and large stocks of unsalable items (household utensils, some types of shoes, towels and other textiles in particular) have accumulated while consumers face acute shortages of many other goods (sugar, batteries and photo-copy paper, for instance). In recent years these stocks have reached 30 per cent of the EDDC's turnover. A survey undertaken in 1984 revealed that the accumulated stocks of finished goods averaged 57 days for Ministry of Industry supervised Corporations but reached 124 days in the case of the Textile Corporation.

Some Corporations are eager to strengthen their contacts with the consumer by undertaking their own distribution, thereby allowing them to take the distributors margin. Others would like to secure more flexible agreements with the EDDC, which generally insists on distributing all or none of an enterprise's production.

Producers would also benefit from greater competition between distributors and retailers. The success of the reforms proposed for the pricing structure depend on the liberalisation of the distribution system along these lines. The private ownership of 70 per cent of the heavy vehicle fleet will facilitate this process, since private traders will be able to compete with EDDC for their services and those of the Road Transport Corporation. Indeed, the distribution system will be the first to benefit from the reform package, the government's challenge will be to encourage the redistribution of profits into investment in productive assets.

Technology and Maintenance

In Ethiopia technological development is seen as an integral part of the industrialisation process. This is reflected in the government's preference for large-scale industrial projects which use complex, modern technology. This industrialisation strategy has increased the manufacturing sector's technological dependence, even though the government has given priority to projects in the field of import substitution. All the machinery used in large-scale projects has to be imported. So do the spare parts. This causes a heavy foreign exchange outlay at the project implementation phase and a steady drain on foreign exchange earnings as the plants import spare-parts and production components that are not available within Ethiopia. Most of the plants have been designed abroad and Ethiopian engineers have played a secondary role in project implementation. Consequently, there has been little opportunity for Ethiopian technicians to develop the requisite skills. The Government is aware that technological dependence is a stumbling block on the path towards self-sustained industrial development and has taken tentative steps towards the establishment of a national technological capability.

A prerequisite to the development of a national technological capability is an expansion in the number of personnel with technical and scientific skills. There is an acute shortage of such personnel throughout the economy (see Section 5.1). While the Government's priority in the education sector remains the expansion of primary and secondary education to ensure that opportunities are open to all, in recent years greater attention has been given to the development of vocational, polytechnic and university education in technical and scientific subjects. The Ministry of Industry has also sought to expand its training facilities through the establishment of specialised institutions at the Corporation and sectoral level. The Electrical and Electronics Institute was set up in 1983 to provide training in the manufacture, maintenance and operation of electrical equipment. The Ministry of Industry, with technical assistance from UNIDO, hopes to develop a pilot foundry for teaching and training in the field of metal casting and an Engineering training centre at the recently completed Akaki Spare Parts Factory. However, it will be some time before the education system can generate the numbers of engineers and technical staff

needed to service the existing industrial infrastructure let alone the planned expansion of capacity.

The government has also sought to establish the nucleus of a research and design capability through institutional development. The first step in this direction was taken in 1980 with the inauguration of the Ethiopian Technology Centre (ETC) within the framework of DPSA. This institution has a broad mandate to:

- Prepare entrepreneurs to prepare a roster of technology suppliers with details of their capabilities and limitations;
- Examine the suitability of various technologies included in domestic or foreign investment proposals and to propose alternative solutions for an increase in the share of Ethiopian manpower in their execution;
- Carry out subsector studies with particular emphasis on the options open to Ethiopia at its current stage of development.

Unfortunately, ETC's activities are circumscribed by the limited number of staff available. UNIDO currently provides assistance to help strengthen the institution's technical capability. Potentially, one of ETC's most important facilities is the provision of a register of design and research facilities. Basic research and design work, particularly of an adaptive nature, is undertaken in Ethiopia but there is no central information service which plant managers can consult. This is equally true of the body of international research. UNIDO currently provides technical assistance in the field of information technology to address this problem. This should assist in the identification of appropriate technology.

Translation of research and design results into production ultimately depends on the development of an engineering capability. Until the early 1980s there was virtually no engineering industry in Ethiopia. This was recognised as a major handicap to industrialisation and, in the TYPP, the government planned a number of large-scale engineering plants that would provide a foundation for future development and double the metalworking sector's share of manufacturing output. Undoubtedly the most important development in this field has been the Akaki Spare Parts Factory which, besides its output of spare parts, will provide a training group in basic engineering skills. Planned developments include basic assembly operations along the lines of the Nazareth Tractor Assembly Plant with a phased introduction of locally manufactured components.

In the early 1980s most factories had inadequate maintenance procedures and management supervision in this field was weak. To address this problem the Ministry of Industry published a maintenance manual in 1982, giving guidelines on how to establish

a thorough maintenance programme. This was backed up by plant visits by Ministry of Industry supervisory staff who sought to tailor maintenance programmes to the needs of the factory. Nevertheless, a recent questionnaire survey revealed that most plants have still not established appropriate maintenance programmes and many others do not follow the established procedures^{19/}. The study concluded that closer supervision by the Ministry would be necessary to ensure that maintenance procedures are implemented.

Domestic resource utilisation and improved linkages

Ethiopian industry is heavily dependent on imported capital goods, raw materials, intermediate goods and spare parts (see Section 2.0). To some extent this reflects the weakness of the domestic industrial structure - the absence of basic and engineering industries - but much of the industrial sector also faces shortages of domestically produced raw materials and intermediate goods. Where supplies of raw materials are inadequate to meet demand they are rationed by the Corporations, the MOI and ONCCP on the basis of annual budgets. Priority is given to the public sector - and exporting enterprises in particular - in the allocation of scarce raw materials.

SSIs also submit annual requests for raw materials which are centralised at sectoral level by HASIDA. The SSIs' allocation is determined by ONCCP. HASIDA then allocates its raw materials budget by providing entrepreneurs with letters of authorization permitting them to purchase materials at controlled prices from state distribution agencies. At both a sectoral and plant level these allocations meet only a fraction of the requests, leading to acute shortages among the SSIs. These shortages encourage arbitrage (the purchase of inputs at controlled prices by licensed producers for sale rather than use in production) and force SSIs to purchase their inputs at inflated prices on the parallel market. Some SSIs are thought to have closed temporarily because the raw materials were not available and the government has banned new SSI investment in the leather and hides industry because the supplies of raw materials are insufficient to meet the needs of existing public capacity.

Factories must use domestically produced inputs where these are available even though these are sometimes of lower quality, more irregular in supply and have a higher price than those available on the world market. The price of Ethiopian cotton for instance is approximately 35 per cent higher than the price of comparable imports. Similarly, breweries use locally made bottles even though similar products could be imported at two-thirds of the

19. Alem Bezezew and Daniel Ketaw, Maintenance Management in Ethiopia, MOI Seminar on Public Enterprise Management, 1988.

cost. Inevitably, the requirement to purchase domestic inputs regardless of price and quality reduces the industrial sector's international competitiveness and potential export earnings.

Low capacity utilisation in a number of factories may be traced back to the irregular delivery of essential raw materials. Since the distribution of raw materials is managed by the public distribution and marketing agencies and prices are fixed, enterprises have little control over their inputs. This creates a long-term planning problem where the growth in manufacturing capacity is not always co-ordinated with an increase in the production of inputs. In the agricultural sector, for instance, the industrial cash crops must compete for scarce resources with the sectoral priority of increased food production.

A solution to this problem may be to encourage direct contact between the producer and consumer of raw materials. This is already possible for a few products. For instance, a spice extraction plant operating under the National Food Corporation (NFC) has signed a contract with a co-operative to produce pepper. The factory purchased and distributed improved seeds to growers and offers a higher price (Birr70 per quintal compared with Birr40 per quintal) than AMC, the normal distribution channel. It has thereby been able to assure regular supplies of suitable quality inputs. NFC hopes to extend this form of out-grower contract to cooperatives and peasant farmers producing a range of agricultural raw materials. An alternative approach is vertical integration, whereby the factory becomes directly involved in the production of its raw materials. For example, an essential oil mill at Wendo Genet, operating under the National Chemical Corporation, has purchased land from the neighbouring Peasant Association to cultivate the lemongrass, geranium and eucalyptus citroidora needed for production. At present, direct contact between the factory and producer is limited to a minute proportion of the total inputs and restricted to the agricultural sector. If recent initiatives prove successful this practice could be extended.

In order to reduce the consumption of imported inputs the government should also encourage linkages between enterprises. The present Corporation structure has facilitated vertical integration within the public sector but inhibited linkages with small-scale manufactures. Of particular importance to the development of such linkages is the establishment of sub-contracting arrangements. These provide flexibility, allowing a large enterprises to respond to fluctuations in demands without recourse to costly investment, and generate economies of scale through specialisation. A framework for the sub-contracting contracts should be established and the Ministry of Industry should take an active role in identifying the enterprises that can participate. The first step in such a process must be the preparation of an inventory of manufactures and the product lines that can be produced by existing plant. Once such an inventory has been disseminated enterprises

will be able to identify local suppliers. The Ministry of Industry may also be able to participate in the negotiation of suitable contractual arrangements.

Mobilising private sector resources

Until the promulgation of "Small-Scale Industry Development Council of State Special Decree" (No.9/1989) in July 1989, opportunities for private sector participation in the industrial sector were restricted to a limited range of small-scale ventures with a capital ceiling of Birr500,000 under the terms of the "Government Ownership and Control of the Means of Production Proclamation" (No.26/1975) - raised to Birr1 million in April 1985. The Special Decree of 1989 waived restrictions on the field of private sector investment in industrial projects - though each project is still subject to Ministerial approval. It also raised the investment ceiling to Birr2 million in the case of projects financed by individuals and Birr4 million for partnerships and cooperatives. Furthermore, individuals and partnerships were allowed to own several enterprises as long as the total capital did not exceed Birr4 million in the case of individuals and Birr8 million in the case of business organisations. There were no restrictions on the total capital of enterprises owned by cooperatives. The private sector welcomed the increase in the investment ceiling and the opportunity to establish subsidiary plants. However, it was soon clear that a ceiling at any level - even though it is difficult to enforce in the absence of a statutory requirement to submit balance sheets for fiscal purposes - would impede the growth of SSIs.

A further reform to the investment code was promulgated as "Council of State Special Decree on Investment No.17/90" on May 6, shortly after the Worker's Party of Ethiopia approved the government's reform package. It announced that only a limited range of activities would be reserved for the state (the defence industry, post and telecommunications, radio and television broadcasting, air rail and large-scale shipping transport) while some other activities required the approval of the Council of Ministers (electric light and power, banking and insurance, supply of potable water and tobacco processing), throwing the economy open to private participation. It also eliminated the ceiling on private sector investment and widened the range of business association allowed to participate in investment projects. Besides ordinary, general and limited partnerships, the government allowed investors to establish joint ventures, private limited companies and share companies. This measure was essential if the private sector was to participate in medium and large-scale projects.

Further legislation will be required if the new forms of association are to work efficiently and the rights of investors are to be guarded effectively. Special Decree No.17/90 announced the establishment of a "Investment Committee", chaired by a Deputy-

Prime Minister, which would act as a "watch-dog", ensuring that the rights of investors were respected. But, its mandate appears to cover the "rights" of investors in relation to the investment incentives offered by the government rather than litigation between the investors themselves. This will remain the mandate of the judicial system. After fifteen years of central planning, the judicial system may not be well equipped - in terms of legislation and experience - to deal with the areas of litigation that are likely to arise. Nor will current legislation offer sufficient protection to investors, particularly with regard to share companies. The preparation of such legislation and appropriate supervisory authorities may well be an area worthy of technical assistance. Certainly, foreign investors will be reluctant to participate in joint-ventures where their legal rights and judicial procedures are ill-defined or unfamiliar.

The decrees of 1989 and 1990 also went some way to reducing the heavy tax burden of private sector enterprises. Since 1978 enterprises owned by individuals have paid taxes on a progressive scale from 11 per cent to 89 per cent for those earnings profits over Birr36,000. Partnerships pay taxes at a flat rate of 50 per cent (the same rate as IPES) while cooperatives are granted tax exemptions. Since audited accounts are rarely available, the Revenue Authority makes a subjective assessment of revenue which enterprises have difficulty appealing against, thereby further increasing the effective level of taxation. Such high rates of marginal and average taxation discourage investment and increase tax evasion.

While the legislation covering taxation remains in place, the 1989 SSI decree provided enterprises exporting at least 10 per cent of their production with a four year tax holiday. Article 18(3) also allowed for a five year tax holiday for enterprises established in "particular places designated by the council of Ministers", though it is unclear whether this referred to the regions or the industrial estates to be built by the MOI (see below). These incentives were increased considerably by the 1990 Decree which provided for tax exemptions for:

- a. Up to two years for investments between Birr500,000 to Birr1 million;
- b. Up to three years for investments between Birr1 million and Birr5 million;
- c. Up to five years where the investment exceeds Birr5 million.

In addition there are scaled exemptions for the expansion of existing plant and additional incentives for investment in preferred areas in the form of extended tax holidays.

Meanwhile the government is considering plans to lower the rate of corporate taxation (currently 50 per cent) and the extremely high rate of income tax levied on the profits of

unincorporated enterprises. A reduction of the tax rates would be a far more effective means of promoting balanced economic growth through private sector investment than the tax holiday system introduced by the 1990 decree. Firstly, reduced levels of taxation would benefit existing enterprises, allowing them to retain income for expansion. Secondly, the tax holiday applies only to investments above Birr500,000 and thereby excludes small-scale enterprises. Consequently, the tax holidays are most likely to benefit foreign investors (foreign investors already benefit from tax holidays under the existing Joint Venture Code, see below). Thirdly, the tax holiday system will benefit those investing in capital intensive enterprises by effectively subsidising capital. This will lead to a misallocation of resources since Ethiopia's comparative advantage lies in labour-intensive manufacture. It will also encourage the importation of expensive equipment from abroad and thereby reduce possible linkages to the domestic engineering sector whilst reducing the net-foreign exchange gain. Lastly, the tax holiday system may encourage the development of marginal footloose industries which might relocate once they become subject to the full burden of taxation. At present a unified tax system for incorporated and unincorporated enterprises is under discussion, along with plans for a reduction in the level of business taxation across the board. If these reforms are introduced, they will provide a far more attractive incentive to long-term investors than the tax holidays as well as guaranteeing a more efficient allocation of resources.

The problem of low technology in the SSI sector was addressed by the 1989 decree through provision for the duty free import of machinery for the establishment of an enterprise, replacement of machinery that has fully depreciated or where expansion is judged to result in a substantial (though unspecified) increase in production. These incentives were extended to all private sector enterprises by the decree of 1990. As yet it is unclear whether these measure will be accompanied by an increase in the official foreign exchange allocation for investment in the private sector and whether the duty exemptions will be extended cover goods imported under the franco valuta system (see Foreign Exchange Allocation below). If not, only a limited number of Ethiopian owned enterprises will be able to benefit from the reduced cost of imported machinery.

Over 1,200 persons had submitted applications to HASIDA, the SSI licensing authority, within five months of the 1989 decree being promulgated compared with 400 applications in the whole of 1988. This indicates both the private sector's interest in the establishment of SSIs and the considerable liquidity of the trading community, which has provided most of the applicants. HASIDA is, however, unable to cope with the deluge of applications.

Under the terms of Proclamation No.124/1977, SSIs must apply to HASIDA for a licence. The applicant need only provide a few

lines identifying the type of project proposed. A temporary licence is granted while HASIDA undertakes a detailed feasibility study of the project free of charge. Owing to the limited staff available to HASIDA for project assessment the number of applications exceeds the number of feasibility studies prepared each year (Table 4.0), leaving a backlog of applications pending. All completed feasibility studies are submitted to the MOI for approval before a full licence is granted. At this stage the MOI may reject a project it considers unrealistic, if, for example, the market is thought to be saturated or the supplies of raw materials are inadequate for new capacity; if the project is of interest to the public sector; or if the project might be detrimental to the interests of a public sector enterprise. In 1988 new private investment in the hides and leather processing industry was banned because of the shortage of raw materials. HASIDA estimates that about 50 private sector projects have been taken over by the Ministry, half of which were later returned to the private sector. Once a promoter has secured a full licence he must register his enterprise with the Ministry of Domestic Trade, negotiate with the municipal and kebele authorities for a site and secure Ministry of Health approval before he may begin construction. Additional bureaucratic hurdles are the application for the extension of utilities to his site and application for credit through the AIDB. If the applicant is successful, project implementation may take up to three years.

Table 4.8: Number of applications for NASIDA feasibility studies and projects licensed, 1983 to 1988

	1983	1984	1985	1986	1987	1988
Applications for feasibility studies	57	94	102	131	219	402
Projects licensed	14	20	31	44	70	145
Incomplete feasibility studies carried over	16	24	27	30	47	100

Source: Data provided by NASIDA.

These cumbersome procedures, which restrict entry into the SSI sector, are currently under review. The MOI has proposed that entrepreneurs should prepare their own feasibility studies - thereby freeing the principal bottleneck in the licensing procedure - and that applications should not be rejected on grounds of market saturation or limited supplies of raw materials. This will oblige entrepreneurs to take risks on the basis of their own assessment of the market situation. It is to be hoped that restrictions will be waived for those enterprises in direct competition with IPEs and those in competing for their inputs.

Since few entrepreneurs have the ability or means to carry out detailed feasibility studies on their own, though they have access to a small and growing number of private consultants operate in the capital, the MOI has prepared a list of 500 project ideas which will be available to the public. In the long-term, it would be desirable to develop the project evaluation and implementation skills of SSI entrepreneurs by provision of short training courses through such institutions as HASIDA. Some countries, the United Kingdom for instance, make attendance at such courses compulsory for those benefiting from particular incentives.

The preamble to the 1990 Investment Decree announced the establishment of an "Investment Committee", headed by a Vice-Prime Minister and staffed by there Ministry of Industry, which will help coordinate investment decisions and ensure that investors receive the incentives promised by legislation. It is unclear whether this institution will assume HASIDA's licensing and regulatory responsibilities, but if so HASIDA will be able to take a more effective role in investment promotion. HASIDA is ideally placed for this function since it already provides technical assistance to the private sector, though on an extremely limited scale. These services could be extended to include the identification of opportunities for sub-contracting, encouragement of private consultancies and ancillary industries, the preparation of market studies to identify new investment opportunities, provision of a channel for managerial and technical advice and training, besides carrying out consultancy services. With donor assistance, its primary function could be transformed from one of regulation of the private sector to investment promotion.

Another MOI initiative is the development of industrial estates for SSIs. This will ensure that enterprises have access suitable sites and services at controlled rents: applications for rented sites from kebelles and municipalities are currently plagued by delay and uncertainty. A model industrial estate was inaugurated in December 1989, with machinery for thirty small-scale installed and operated as part of a co-operation agreement with the Indian government. Six teams are now carrying out studies to identify suitable sites and potential SSI projects in thirty cities in Ethiopia.

These initiatives have certainly provoked public interest in SSIs and will facilitate the implementation of new projects. Whether this interest can be translated into increased employment, exports and production finally depends largely on improved access to inputs. Shortages of raw materials from domestic sources and foreign exchange are the principal constraints on operating SSIs and the root cause of their low rates of capacity utilisation (see Section 2.0). Consequently, increased private sector investment in the industrial must be accompanied by larger allocations from the central budget if sectoral performance is to be improved. Furthermore, many private sector entrepreneurs are prevented from expanding their businesses or establishing new enterprises by the shortage of investment funds. The government has declared its intention of reducing the interest rate charged to private sector investors to a par with that charged to the IPEs. This will reduce the cost of credit but it will not make it more accessible since the banking system is under capitalised and burdened with non-performing loans to IPEs. Even though many entrepreneurs operating in the parallel market may have considerable liquidity, credit will have to be made available if the private sector is to expand.

Foreign investment

The "Government Ownership and Control of the Means of Production Proclamation" No.28/1975 made provision for the participation of foreign capital in a limited range of heavy industrial projects as the minority interest in partnership with the government. No foreign investor took advantage of these opportunities. Their reticence may be explained, in part, by the experience of nationalisation in February 1975, when all foreign owned enterprises were brought under state control with the exception of six "share companies" in which the state assumed a majority interest. Compensation claims were settled at a much later date (1984 in the case of Mitchell Cotts Engineering (UK), and 1985 in the case of 30 claims by US citizens) which created a climate of uncertainty.

Nor was the Ethiopian Government committed a policy of foreign investment promotion at that time. Ethiopia's experience of foreign investment had not been positive in the period before the Revolution and so, after 1975, the government gave priority to national economic development and the collective ownership of the means of production rather the promotion of direct foreign participation. Although the share of foreign capital in manufacturing industries appears to have been substantial in the period before 1974 - in 1972 foreigners held 66 per cent of total paid-up private capital and owned 101 (37 per cent) medium and large scale enterprises, while holding majority shares in another 42 (15 per cent) firms - the inflow of investment was relatively small, fluctuating between \$8 million and \$12 million between 1962 and 1972. If remittances are taken into account, the net inflow was even lower: enterprises reinvested less than 20 per cent of profits earned in Ethiopia and repatriated the remainder. In 1970 alone \$12 million was repatriated²⁰. Furthermore, foreign investment was concentrated in import substitution industries with limited linkages to the domestic economy and so contributed little to national economic development.

The first steps to attract foreign investors were taken in 1983 with the promulgation of the "Joint Venture Establishment Proclamation" No.235/1983. This allowed foreign capital to invest in all economic activities (investment in public utilities, banking, insurance, transport, domestic trade and precious metals would, however, require special authorization from the Council of Ministers) within the framework of a joint-venture in which the government would hold a majority interest (though this clause may also be waived by the Council of Ministers). The proclamation provided guarantees for compensation in the event that an

20. Duri Mohammed, "Industrialisation and Income Distribution in Ethiopia", in J. R. Ryeyemamu (Ed.), *Industrialisation and Income Distribution in Africa*, Dakar, 1980, p. 38.

enterprise being nationalised but stated that the duration of the venture should be no longer than 25 years. As of 1984 foreign partners in joint ventures were free to repatriate profits and the joint-venture could benefit from a range of tax exemptions:

- a. Exemption from custom duties, government and municipal taxes levied on imports of capital goods and the first instalment of spare parts. The venture may also be granted exemptions on the import of raw materials depending on the agreement of both parties;
- b. Exemption from customs duties and transaction taxes for products exported;
- c. Exemption from corporation tax for five years in the case of new projects and three years in the case of a major expansion project;
- d. Corporation tax is payable at a flat rate of 40 per cent (compared with a sliding scale from 50 to 89 per cent for local SSIs);
- e. Dividends reinvested in Ethiopia are exempt from tax but repatriated dividends are taxed at 10 per cent.

Despite these generous incentives, only four enterprises were established under code. Three of these are investments by foreign governments. An agreement on the fourth project, a 15,000 t/y capacity oil refinery in Addis Ababa, was signed in June 1988 by a consortium of four foreign petroleum distribution companies and the state, which holds a majority interest. An Italian vehicle manufacturer is currently discussing a fifth project, the assembly of truck bodies. The MOI is also trying to interest potential foreign partners in number of other projects, including the manufacture of transformers and low cost vehicles.

This disappointing response has been attributed to the continued lack of confidence in investment security, a sentiment reinforced by the articles in the Proclamation defining the government's right to nationalise an investment and the time limit on the duration of an agreement. The government's authority to choose the domestic partner in the joint-venture and the effective exclusion of domestic private capital from joint ventures with foreign investors may have had a similar effect. Furthermore, while a timetable existed for the initial procedure of application (approval of a project in principle by the Foreign Investment Committee within one month following review of the application by DEPSA and completion of the feasibility study within four months) final approval of a project and implementation were still subject to lengthy negotiation with numerous authorities.

Promulgation of a new Joint Venture Code in July 1989 (Special Decree 11/1989) addressed most of these issues. It abolished the requirement for majority shareholding by the government (though,

under this legislation, the government must still be a partner) and permitted domestic private capital to participate in joint ventures with foreign partners (Article 4); it allowed partners to negotiate the duration of the joint-venture agreement (Article 7); and dropped the clause allowing for nationalisation whilst retaining the usual guarantees (Article 12). The tax privileges under the 1983 Proclamation were retained (Article 27) and the decree specified generous provisions for the repatriation of profits and earnings (Article 13).

Additional incentives were announced in the "Council of State Special Decree on Investment, No.17, 1990", promulgated on May 6, 1990. It declared that private investors would be allowed to invest in state farms, held as concessions from the state. It permits the foreign investor to choose his partner without government interference. Tax holidays were lengthened (see Promotion of Private Sector Investment above) and all restrictions on the repatriation of profits, proceeds of liquidation or sales of shares, debt servicing payments, fees and royalties on technology transfer were dropped.

Unfortunately, a number of articles of the 1989 Joint Venture Code will have to be liberally interpreted if they are not to discourage potential foreign investors. Article 25, for example, requires the joint-venture to give preference to domestic raw materials, services and supplies wherever possible. Article 24 requires the joint venture agreement to specify the "senior positions" to be held by expatriate personnel. Both these matters are subject to negotiation when the joint venture agreement is formulated. On the other hand, Article 5(5), which states that the contribution of the foreign investor is to be determined at the prevailing National Bank of Ethiopia exchange rate, is not negotiable. Since the Birr is considered to be overvalued and profits are distributed according to equity participation, Article 5(5) will favour domestic capital at the expense of foreign investors and undermine the benefits that accrue from generous tax exemptions. Devaluation of the Birr would solve this problem, but the government has yet to announce any change in the exchange rate and when such an announcement is made it is likely to be the first step in a devaluation process lasting a number of years.

In 1989, the government also streamlined the Joint Venture application procedure. The Joint Venture Department of the Office of the State Committee for Foreign Economic Relations (OSCFER), which reports directly to the Council of Ministers, is to act as the co-ordinating agency for applications by interested foreign partners. Potential investors currently apply through a number of channels - the Chamber of Commerce or the relevant Ministry. This will facilitate the processing of applications. However, OSCFER, as presently conceived, will not act as a "one window" agency. It will submit its recommendations to the State Joint Venture Committee which approves projects usually after consultation with

the relevant Ministry. Joint-venture partners will have to approach agencies and municipal authorities individually once they have received their authorization. It may prove advantageous to strengthen the staff of the Joint Venture Department by secondment from other government departments so that it can undertake bureaucratic procedures on behalf of the joint venture partners. Trading licences could for, instance, be granted within the Joint Venture Department rather than through a direct application to the Ministry of Domestic Trade. Such a "one-window" approach is standard procedure in many other African countries.

By mid-1990 the government had begun to realise the benefits of the "one-window" approach. Special Decree No.17/90 announced that a special Investment Committee would be established under one of the Vice-Prime Ministers. This committee will be responsible for ensuring the timely completion of bureaucratic procedures and making sure that investors receive the benefits promised. It is unclear as yet whether the committee will be supported by a sufficiently large secretariat to carry out its mandate, particularly as the committee will be responsible for domestic investors as well as those from abroad.

There has been a positive response to the new codes from foreign investors. By January 1990 - even before the announcement of additional incentives in May 1990 - the Joint Venture Department had already opened fifteen files for interested foreign partners, though none of the applicants have yet received a certificate of approval. These applications cover a wide range of industrial and mining projects.

In order to encourage foreign investment in export oriented industries the government is also considering the establishment of an Export Processing Zone (EPZ), which will offer additional incentives (see below). Foreign nationals are already encouraged to participate in small-scale industries, particularly those which export a proportion of their output. The "Small-Scale Industry Development Proclamation" No.9/1989 (see above) allowed foreign nationals to establish small-scale industries provided that "the industry produces export or import-substitute products or contributes to the transfer of technology, as determined by the directives to be issued by the Minister of Industry" (Article 3.3). Several interested foreign nationals had already made inquiries of the MOI under the terms of this proclamation by the end of 1989. However, application procedures and directives governing the eligibility of projects had still not been prepared in December 1989 and so the processing of applications was delayed. The 1990 Investment Code subsequently eliminated the restrictions on small-scale foreign investors, though most of the incentives included in the legislation made it clear that the government would prefer applications for large-scale projects.

Despite the limited success of similar earlier legislation, Special Decree No.17/90 elaborates an investment promotion policy based on freedom of profit repatriation, tax-holidays and tariff concessions combined with measures to ease the administrative hurdles to investment. Freedom to repatriate profits is an important incentive to foreign investors, though the loss of profits will inevitably reduce the investment's impact on the domestic economy. Current legislation is extremely generous in this respect, allowing enterprises to repatriate licensing fees and royalties as well as profits. Yet Ethiopia's over-valued exchange rate - if applied to foreign investments - will counter the incentive of liberal legislation.

In theory tax holidays allow investors to recover their capital more quickly and maintain greater liquidity in their early years, thereby reducing risk. But such incentives are rarely effective, partly because they are unlikely to benefit the investor. Tax exemption is worthless if there is no tax liability, and infant-pioneer industries of the type that the government should seek to promote rarely generate substantial profits in their early years. The holiday should begin in the first year the investment returns a profit if it is to be effective. However, a lengthy period of tax exemption is likely to be costly to the government. This is equally true of the present system in the case of investments that generate a profit quickly. Some "foot-loose" industries, such as the garment industry, may take advantage of the tax holiday to earn substantial profits and then relocate once the holiday period is over.

Where a long-term investment is planned incentive schemes are simply the "icing on the cake". Economic and political stability, resources and markets, the government's attitude toward the private sector in general and the absence of bureaucratic red tape are far more important factors in attracting the type of long-term investment that the government seeks to promote. If these preconditions are fulfilled the investor may not even consider the various incentives offered in assessing the viability of the project. By offering incentives to such investors the government would needlessly transfer resources from its tax payers to the corporate investor.

Nor are tariff concessions without cost. Not only does the government lose revenue, tariff concessions distort the allocation of resources. Firstly, they apply only to imports, thereby encouraging investors to import goods that might be available locally and perpetuating the economy's import and technological dependence. Secondly, where they apply to imported capital goods, they effectively subsidise capital investment and encourage capital investment production. This ignores Ethiopia's comparative advantage in labour-intensive production and does not maximise employment generation, which is one of the government's priorities.

While the new legislation is an important step in the promotion of foreign investment, by indicating the government's willingness to accommodate foreign investors, a review of the system to maximise its promotional effect and minimise its real and opportunity cost is clearly needed. A more selective investment code - at present all investors are eligible, though the level of incentives varies according to the value of the investment - would minimise the opportunity cost of lost government revenue. Ideally, eligible projects should be selected on the basis of their economic return, using shadow world market prices. A wide range of incentives could be offered that might be better in line with the government's social and economic objectives such as a stable tax regime, a reinvestment allowance and employment related tax allowances. These incentives should be made as direct as possible to minimise distortions in the relative pricing of factors of production and the distribution of resources.

No matter how generous the incentive regime, incentives alone will not attract investors - certainly not the type of long-term investors with a commitment to reinvestment, employment generation, manpower development and technology transfer. Although the Ethiopian government has indicated its willingness to cooperate with foreign investors, the memory of earlier nationalisations and delayed compensation, together with continued insecurity in the north of the country, slow progress towards the introduction of a multi-party state and wide-spread ignorance of Ethiopia's resource potential will all discourage foreign investors. Despite its record for prompt debt-repayment and good credit rating in international banking circles, investors are likely to regard Ethiopia as a high risk for some time to come. Those that are prepared to take advantage of the opportunities opening up are likely to apply a high discount rate when assessing their projects in the hope of minimising the risks involved. Under these circumstances, the type of investor the government will attract will be those that have characterised the early stages of "Free Enterprise Zones" development: producing finished goods, with few linkages into the domestic economy and a tendency to be footloose.

Foreign exchange allocation

Shortages of foreign exchange are frequently cited as constraint on industrial performance by managers and Ministerial staff. Foreign exchange allocations to the MOI for raw materials and spare parts increased by only 6 per cent in the four years to FY1988, from Birr260.4 million in FY1985 to Birr276 million in FY1988 (though they are thought to have increased to Birr327 million in FY1989). Over this period the proportion of the Ministry's foreign exchange request satisfied has fallen from 90 per cent to 75 per cent. The actual shortfall is probably greater since applications for foreign exchange are rigorously reviewed at every level. By mid-1990, the situation had become sufficiently serious for the government to include four IPEs in the EEC

sponsored sectoral import programme^{21/} alongside such essentials as fertilisers. What is more, the foreign exchange shortage will become more acute in the near future following the collapse of world coffee prices and the reduction of export earnings this entails.

Under existing procedures, each plant submits an annual foreign exchange request to its Corporation for compilation about five months before the beginning of the fiscal year. The Corporations submit their requests to the MOI for verification and they are then passed on to the ONCCP. Quarterly allocations to the Corporations are made by the Foreign Exchange Allocation Committee (FEAC) of the WPE, advised by the ONCCP, on the basis of foreign exchange availability. Faced with a shortfall, priority is given to exporting enterprises, industries producing basic consumer goods, strategic industries (for example, Crown Cork which makes bottle tops for the beverage industry) and major employers. Once authorization has been granted the corporation applies for a Foreign Exchange Licence and submits three tenders to the NBE. These tenders are evaluated by the NBE which may choose the least cost product even if this is not the product preferred by the user. The procedures are both complex and inflexible - providing little opportunity for plants to request additional funds once the fiscal year has begun. A plant suffering a breakdown, for instance, may have to wait months before receiving an emergency allocation to purchase replacement machinery.

SSIs face even more crippling foreign exchange restrictions. As with the IPES, each SSI submits an annual foreign exchange request to HASIDA which passes it on as a sectoral request to the ONCCP. HASIDA currently allocates foreign exchange to only 260 SSIs and new applicants may have to wait several years before they will be added to the list. The total foreign exchange request has remained constant at about Birr40 million for several years - a gross underestimate of the actual requirements - but HASIDA's allocation has fallen sharply in recent years from Birr29 million in FY1987 to Birr14.5 million in FY1989. Priority is generally given to those SSIs with a strong export record. All SSI imports financed through the HASIDA allocation are purchased through the Ethiopian Import and Export Corporation (ETIMEX), which also purchases imported goods for the EDDC. If EDDC already has a product in stock the SSI is required to purchase it, if not he may solicit tenders from one of the EDDC's registered suppliers. Goods that are produced locally may not be imported, even if there is a significant price differential, unless the application is

21.. The enterprises included were the Ethiopian Sugar Corporation, the National Textiles Corporation, the Ethiopian Food Corporation and the Ethiopian Chemical Corporation. These enterprises were allocated foreign exchange to purchase caustic soda, oxygenated water, plastics and a range of machine parts.

accompanied by a certificate from the local supplier stating that it is unable to provide the product. ETIMEX assesses whether the tender documents or local products meet the tender specifications and, in the case of imports, it will generally purchase from the lowest cost supplier regardless of the customer's preference. Clearly, the procedures are geared to saving foreign exchange rather than ensuring that producers secure the least cost and most suitable inputs.

During the first six months of FY1990, ETIMEX received no foreign exchange allocation owing to the acute foreign exchange shortage faced by the government. Deprived of access to foreign exchange through official channels, SSIs have had to depend entirely on two unofficial channels: the franco valuta^{22/} system and the parallel market. In normal circumstances, the franco valuta system funds the majority of imports for the SSI sector, either through direct purchases by producers or through the mediation of traders. However, goods imported through the franco valuta system carry a import surtax on top of the basic duty payable (around 50 per cent on capital goods and 200 per cent on other products). Moreover, the system was temporarily suspended in 1988 and re-introduced at the beginning of 1989 with stricter controls, including a temporary ban on imports of raw materials. Authorization for raw material imports through the franco valuta system was restored in mid-1989 but the temporary restriction aggravated the severe shortage of inputs in the SSI sector and increased dependence in "mercato" - Addis Ababa's parallel market. Traders import a wide range of consumer goods, financed from the proceeds of illegal exports (principally livestock and coffee), most of which pass through a clearing market in Dire Dawa. Lesser quantities of spare parts and capital equipment are also available, but at a premium. Parallel market prices are thought to be higher than the market price of franco valuta imports. This parallel market is likely to become institutionalised now that the government has - in principle - agreed to allow traders to operate alongside the state owned import agencies. Since there is no indication that additional foreign exchange will be made available, parallel market financing and the franco valuta system will be the only means by which these traders can operate.

22. Under the franco valuta system the National bank of Ethiopia provides Foreign Exchange Licences for goods on which no foreign exchange is payable. The importer is not required to identify the source of funding. The bulk of the goods imported under the franco valuta system are food aid imports financed by donors. The remainder are capital and consumer goods imported by private sector traders. Much of the foreign exchange employed in the franco valuta system is provided by Ethiopian nationals resident abroad, purchases of foreign exchange at the parallel market rate (Birr5 to Birr6=\$1) and the foreign bank accounts of traders who have exported goods illegally.

The MOI is concerned that the present foreign exchange allocation system reduces the productivity of exporting enterprises by depriving them of essential inputs, even though these enterprises are given priority in the allocation of funds through official channels. In order to address this problem the MOI proposes to allow exporting enterprises in the public sector to retain a proportion (still to be determined) of their foreign exchange. This practice is already followed in respect of Ethiopian Airlines and the Ethiopian Shipping Lines but all other exporters must submit their foreign exchange receipts to the NBE immediately. The foreign exchange retained by Corporations would be centralised in a revolving fund which enterprises would be allowed to draw on to finance production for export. The value of withdrawals would be related to export performance.

Ultimately, however, the solution lies in the devaluation of the Birr and the introduction of a free market for foreign exchange open to IPEs and the private sector alike. As already discussed in Section 1.2 devaluation is likely to take place in stages over a period of two to three years. The success of this measure will depend on the availability of foreign exchange. Given the weakness of Ethiopia's balance of payments position, the shortage of foreign currency is likely to persist for some time to come. Donors will have to step in to prevent the economy being asphyxiated by restrictions on essential imports. In the past donors have been extremely reluctant to commit funds for balance of payments support, but, during the period of transition, schemes such as the EEC's sectoral import programme will be crucial to the health of the economy.

At the same time, the government will have to move towards a market system for the allocation of foreign exchange, just as it has proposed for other inputs. Although it may continue to allocate foreign exchange to strategic inputs and industries, it could profitably introduce an auction system. This would both reduce the gap between official and parallel market rates and improve the efficiency of allocation procedures. However, the experience of Somalia shows that the success of foreign exchange auctions is largely dependent on adequate financing by donors. Where insufficient foreign exchange is provided the exchange rate plummets - or becomes chronically unstable - and producers are pushed out of the market by traders who seek to benefit from the scarcity rents on consumer goods. Clearly, close cooperation with the donor community is essential if reform of the foreign exchange allocation system is to proceed smoothly.

Protection

Even though the over-valued Birr (fixed at Birr2.07=\$1 since 1974) deprives domestic producers of the "natural" protection afforded by an equilibrium exchange rate, domestic producers are protected from international competitors by import barriers and

foreign exchange allocations (notwithstanding the large parallel market). Furthermore, public sector manufacturing enterprises are shielded from domestic competition by price controls, the monopolisation of distribution for many products by state distribution agencies and restrictions on the activities of private sector firms.

The prohibition of imports of goods with similar specifications to those manufactured locally - without authorization of the domestic producer - is the most important barrier to competition from imports (see Foreign Exchange Allocation above). In addition, all imports are subject to five types of import levies:

- a. Import duty ranging from zero rating for a wide range of raw materials and 10 per cent for most of the remainder, zero rating for capital goods and 0-35 per cent for intermediate products, to 125 per cent for some consumer goods. Duties tend to increase with the degree of processing;
- b. Transactions tax on all imports at zero rating, 15 per cent and 18 per cent depending on the type of imported raw material or finished product. Domestic sales are also subject to a transactions tax levied at 7 per cent, though a number of products are zero rated;
- c. Excise taxes on a selected range of imports and domestic sales, from which exports are exempted;
- d. Municipality tax of 1 per cent;
- e. Export subsidy surcharge on some products at 5 per cent.

On top of these taxes, goods imported through the franco valuta system are subject to a surcharge of 50 to 200 per cent. The result is a high but uneven level of protection for domestic industry; in some cases the customs duties exceed the difference between border and domestic prices, in others they are lower. A recent study of the Ethiopian textile industry, for instance, has shown that while the Nominal Protection Coefficient (NPC) was uniform at 2.08, the Effective Protection Coefficient (EPC) varied from 15.4 to 13.51²³. Such wide variations in the level of effective protection have important implications for the efficiency of resource distribution within the industrial sector (see Section 2.0). Furthermore, while taxes on imports generate substantial

23. Gezahgne Mitikie, Measuring Economic Efficiency. A Case Study of the State Owned Textile Industry in Ethiopia. MSc Thesis, Addis Ababa University, 1987.

revenue for the state (Birr579.3 million in FY1987), these costs are passed on to the consumer and, in the absence of efficient draw back facilities, the export market, reducing industry's domestic and international competitiveness.

To overcome these problems, a gradual transition to a unified tariff system has been proposed. This would seek to reduce over all level of tariffs and the level of dispersion of effective protection (for instance, currently tax free imports - some intermediate and capital goods - would be subject to a tariff of 5 to 10 per cent). Indirect taxes would be reformed at the same time, by integrating the turnover and transactions taxes into a single sales tax which would be levied on imports and domestic manufactures at the same rate. This would have to be a long-term goal. Industries accustomed to high levels of tariff protection would be adversely affected by the immediate reduction of tariff levels. Furthermore, the reduction of tariffs across the board would stimulate the rapid growth in imports which the economy cannot, at present, finance. Trade liberalisation will, therefore, depend on the progress of import substitution and export promotion within the economy.

Export promotion

Expansion and diversification of exports were identified as objectives of the TYPP (FY1985-FY1994) and the TYP (FY1986-FY1989). Since the collapse of world coffee prices in mid-1989 and consequent fall in foreign exchange receipts from traditional exports, the expansion of exports from other sources - such as industry, minerals and a wider range of cash crops - has become a matter of urgency. Unfortunately Ethiopian manufacturing industry has developed along the lines of import substitution and so has little experience of exporting. The management is ill-prepared for export development and products are often ill-suited to export markets. Managerial reforms will, therefore, be a key step towards development of an export market. However, specialist export promotion institutions will also be required if industry is to meet the challenge of penetrating export markets.

Since 1987 export promotion the Export Promotion Department of the Ministry of Foreign Trade (MFT) - and its nine trade promotion offices overseas - has been the main channel for export promotion. This department helps enterprises identify export markets and products with export potential, advises Corporations on product design and presentation and puts producers in contact with buyers through its representation at international trade fairs and conferences. A similar range of services are provided by the Ethiopian Chamber of Commerce (see Section 4.2). Furthermore, most of the Corporations have departments engaged in the management and promotion of export sales and HASIDA's Export Marketing Department (Handicrafts of Ethiopia), established in 1981, co-ordinates export and promotional activities behalf of handicrafts sector.

These institutions face acute shortages of skilled personnel, particularly personnel with experience in the field of international marketing and product presentation. Training in trade promotion is already provided by the Ethiopian Management Institute (EMI) and by the Ethiopian Institute of Banking and Insurance (EIBI), but there is still a significant shortfall. While interest in a specialist Foreign Trade Institute has been expressed in some quarters, it would be expedient to expand training capacity within the framework of existing institutions where a broader base of managerial skills can be taught. Efforts should also be taken to upgrade skills of promotional staff and in this context both the EMI and EIBI could benefit from technical assistance from specialists in the fields of marketing and product design.

Very little has been done to cater for the needs of small-scale exporters, or potential exporters. Much has to be done to identify those products and enterprises that are ready to export and the managerial and technical modifications required if they are to be successful. The dissemination of information is a key stage in preparing potential exporters for an export drive, but training and consultancy services will also be needed. These services could be provided through the Chamber of Commerce, as is the case in many other countries. At present, however, despite its willingness to serve in this role, the Chamber is inadequately resourced and has limited experience in these fields. Technical assistance and investment will be needed if it is to fulfil this function.

While both the SSIs and Corporations contact and negotiate with foreign clients on their own behalf, exports are closely controlled by the MFT and NBE. Exporters must register their export products with the MFT to secure an annual export licence, a time-consuming process involving the preparation of a study evaluating the long-term supply and world market demand for their products. This may be beyond the capacity of SSI managers. All new products and changes of product specifications must also be registered to secure approval. While the price of both private and public sector exports is freely determined, export contracts must be submitted to the NBE immediately for study. NBE reviews the contract and may refuse its authorization if it considers the price too low, i.e. lower than world market price or lower than the price in previous contracts. This leaves little room for exporters to offer discounts or "loss-leaders" when penetrating new markets. It is also a cause of delay and frustration for foreign clients.

Despite the NBEs efforts to secure the maximum price for exports, border prices in Birr are frequently lower than those in the domestic market. This is a consequence of the over-valued exchange rate which reduces the Birr earnings of exports relative to the controlled prices of domestic sales and the scarcity rents available to private sector producers. Inevitably, this encourages producers to allocate resources to products for sale in the

domestic market. To some extent, this tendency can be countered by Ministerial directives and the priority given to exporters in the allocation of raw materials and foreign exchange, such that producers may be prepared to subsidise exports sold at a loss through domestic sales in order to gain preferential access to essential inputs. However, in order not to impair the profitability and liquidity of exporting public enterprises, the government introduced a system of export subsidies in FY1983.

Public enterprises submit an annual claim for the difference between the border price and the cost of production and delivery to ONCCP. The ONCCP assesses the claim and authorises the NBE to pay a lump sum subsidy to the MOI from a fund financed, in part, by the proceeds of the export subsidy surcharge tax. The subsidy, which is usually less than the total sum requested, is then distributed between exporters on the basis of need. Since the coverage is not complete and credits are delayed, enterprises resort to short-term borrowing to cover losses.

Leather goods and spices are the only products which have not required subsidies on an annual basis. Other products - notably textiles and chemicals - have received substantial subsidies, sometimes exceeding the fob price (details are not available). This practice does not encourage enterprises to minimise their costs or maximise their export price. Moreover, in the absence of an assessment of foreign exchange expenditure on export products, the system may actually subsidise net foreign exchange losers. Under these circumstances, the subsidy system is incompatible with the efficient allocation of resources in the industrial sector and, if manufactured exports continue to grow, will place growing burden on the domestic banking system. Furthermore, while temporary subsidies could be justified on an infant industry argument they are likely to attract retaliation from potential export markets.

The ultimate solution to this problem would be to devalue the Birr, an option which the government is currently considering. In the meantime, the government could consider the introduction of an equitable subsidy scheme related to the ratio between the official and market exchange rates - tantamount to a dual exchange rate. This would go some way to reducing the present distortions in the allocation of resources between profitable and loss making exporters.

Another problem faced by exporters is the level of taxation - customs duties and domestic transactions taxes - on inputs and exports, both of which increase product prices and reduce international competitiveness. At present all exports are subject to a 2 per cent export tax, though the withdrawal of this charge is under discussion. More important is the inadequacy of tax drawback system, which, at present, does not cover duties on all inputs, allows the Customs department rather than the enterprise to estimate wastage rates and does not allow manufacturers of

intermediate goods selling to exporters to waive the transactions, excise and turnover taxes on these products. Reform of the drawback scheme is currently in preparation to ensure that it is comparable to those offered to exporters in other countries.

While this is of interest to enterprises which export a small proportion of their production, major exporters should be able to import all the inputs used in the manufacture of exports raw materials without paying import duties or taxes as is international convention. A limited number of exporters - the National Leather and Shoe Corporation and Ethiopian Spices - are able to import inputs duty free where they can prove that they are to be used wholly in the manufacture of export products. This privilege, granted by the Customs Authority, does not apply to those enterprises producing intermediate products for sale to exporters and used in exported products. This omission should be rectified. Doing so will provide a strong incentive for the development of linkages - subcontracting as well as direct purchase - between exporting enterprises enjoying a privileged export regime and remainder of the economy.

Export Processing Zones and Bonded Factories

A complimentary solution to the problem of duty free production for export would be to establish an Export Processing Zones (EPZ) or bonded factories which would enjoy a privileged customs regime comparable to those of Mauritius and many other countries world-wide. As presently conceived, the bonded factories and an EPZ - which could be established in Addis Ababa or in Assab - would operate simultaneously. The former would provide a framework for existing public enterprises to develop along export oriented lines. The latter would attract new foreign investment by providing a site equipped with all necessary services and subject to privileged tax and customs regimes.

A strong prima facie case can be made for such institutions. Ethiopia has plentiful supplies of cheap - though largely unskilled - labour. In 1988 the average wage of public sector industrial employees was less than Birr300 (\$150) per month, though the minimum wage is only Birr50 (\$25) per month, which is extremely competitive by international standards. It is ideally placed between Far Eastern and European markets to attract light-assembly industries exporting to European markets. This is particularly true in the case of garment and textile industries where Ethiopia's status as an LDC guarantees unrestricted duty free entry into the EC under the Lome Convention.

On the other hand, a number of factors are likely to discourage investors: the weak infrastructural base - with poor transport being a major constraint on the ability to export regularly and meet delivery schedules; the limited opportunities for linkage into domestic industries through sub-contracting for

maintenance, equipment manufacture and tooling; the shortage of skilled and experienced manpower accustomed to an EPZ factory regime; the present absence of foreign investment and the experience of past nationalisations; and the prevailing central planning system.

Much will depend on the type of incentives the government is prepared to offer. Details of the tax and duty regimes applicable to an EPZ and bonded factories have not yet been worked out, nor has the government determined whether such enterprises would benefit from privileges in relation to the labour law and other regulatory legislation. A World Bank funded study to assess the impact of an EPZ on Ethiopia's export performance and its suitability as a means of attracting foreign investment and generating employment is expected to begin in the near future. This study will also highlight the benefits to be gained by adopting an EPZ policy. If the experience of other countries is anything to go by, the benefits will be limited. EPZs generally operate as an enclave, in the early stages at least, producing relatively simple, low technology products with a limited degree of processing, using few local inputs other labour and utilities and offering little in the way of technology transfer and training^{24/}. Benefits, in terms of the contribution to Ethiopia's economic development, are most likely to accrue if direct foreign investment in the EPZ is in the form of joint ventures with Ethiopian public or private partners.

Privatisation

Privatisation appears to have been introduced into the debate on economic reform in Ethiopia more as a threat than as a policy. During the discussions on economic reform before the Central Committee of the Workers' Party of Ethiopia in March 1990 the government announced that public enterprises that were unable to operate profitably might be sold to the private sector or liquidated. No enterprises were specifically identified and the procedures to be applied have yet to be announced. Privatisation is, consequently, still only a remote step in the progress towards a market economy. The government has, after all, announced its commitment to a mixed economy in which the public and private sector would operate side-by-side on an equal basis, rather than turning its back on government intervention altogether.

Nevertheless, given the perilous financial situation of many public enterprises, the weakness of existing management and the limited resources available for their refurbishment, privatisation be a wise policy move if public management is unable to restore profitability. Privatisation should, however, be considered in the

24. ILO/UNCTC, Economic and Social Effects of Multinational Enterprises in Export Processing Zones, Geneva, 1988.

broadest sense. Closure and liquidation may be the only viable option for some of the worst cases. Public enterprises may be able to raise capital by selling of non-returning assets and so finance their recovery under existing management. Others may be able to raise capital by selling equity, either by a share issue or through establishing a joint-venture. Equity could also be used to reduce debt burden through debt:equity swaps, both to domestic and international banks. This may involve some private sector participation at board level. Management contracts could also be considered, particularly where the private sector management consultants train their counterparts within the existing management. Enterprises could also be leased to private sector enterprises. This allows the state to retain assets while the lessor may operate the enterprise as he chooses, though complications may arise where the lessor wishes to increase the enterprise's capital stock. Lastly, the government could divest entirely from enterprises by selling the assets and "good-will" to private investors. Choice of the appropriate stratagem will depend on the situation of each enterprise.

At the same time, it should be recognised that the government's options may be circumscribed. The government has implied that only loss-making enterprises would be privatised. Such enterprises may not find a buyer, or the highest bid may be considerably lower than the book value of the assets on account of the enterprise's past performance. Divestiture from the largest enterprises will be particularly difficult because few Ethiopian entrepreneurs are sufficiently capitalised. Without a well developed capital market, a public share issue - the method used in most industrial economies - would be problematic. The former Peoples' Democratic Republic of Yemen was able to secure widespread support for new-mixed capital projects, but the share issue had to be carefully tailored so that migrant worker's could afford stocks. For both these reasons the domestic economy may be unable to absorb the sale of IPEs and foreign companies would have to participate. The workforce may be opposed, knowing that private owners are likely to compress the workforce as one of the first measures introduced to restore profitability. Social costs, such as increased unemployment, are difficult to measure. This is further complicated by the monopolies and quasi-monopolies enjoyed by many Ethiopian IPEs. In such cases measures would have to be introduced to control rents.

One lesson from other developing countries is the importance of planning and careful analysis at an enterprise level before embarking on ad hoc privatisations. Each public enterprise must be classified according to the desirability of and their potential for divestiture, lesser forms of private sector participation and liquidation. Such classification should go hand in hand with the reform of public sector management, since this will identify the constraints and potential of individual enterprises. A programme can then be prepared. Since Ethiopia's IPEs have not yet had the

opportunity to prove their worth in a market-oriented economy, preparation of such a programme would be premature for the time-being.

5. RESOURCES FOR INDUSTRIAL DEVELOPMENT

5.1 Human resources

Labour force

According to the 1984 census Ethiopia's total population numbered just over 42 million persons and was growing at a rate of 2.9 per cent per year (Table 5.1). At the current growth rate, the population will double in 24 years and increase by 60 per cent by the year 2000. Approximately 22.6 million persons (49 per cent of the population) were of working age in 1987 of whom 19.8 million were economically active, suggesting a participation rate of 87 per cent for the population of working age (though the economically active population includes a proportion of juveniles and persons older than 65 years). At present there are 410,000 new entrants to the labour force each year - of which approximately 30 per cent join the urban job market. By the year 2000 this number will have risen to 685,000.

The economy has proved unable to accommodate the rapid growth of the labour force. According to a Ministry of Labour and Social Affairs (MOLSA) survey undertaken in 1984, there were only 440,000 wage earners in Ethiopia, the vast majority of whom were government employees. This is equivalent to only 2.5 per cent of the economically active population. Since all enterprises employing more than ten people must recruit through MOLSA, except for students recruited direct from university and technical colleges who are allocated by ONCCP, the MOLSA estimates may be regarded as fairly accurate.

From 1979 to 1989 a total of 152,857 people were recruited through MOLSA's 36 employment exchanges, an average of 13,900 appointments per year. Only 23.5 per cent of those registering at MOLSA employment exchanges were appointed (equivalent to just 3 per cent of the estimated number of entrants to the labour force). Moreover, the number of placements has fallen dramatically in recent years, from 18,272 in 1980 to 15,274 in 1984 and just 7,989 in 1989. It should also be recalled that not all of those appointed were recruited for new jobs. About 5 per cent of those appointed each replaced retired workers and so the number of job creations has probably amounted an average of about 13,200 over the 1979-89 period. In recent years early retirement has been introduced as a means of increasing the number of younger staff appointed.

Unemployment is already a serious problem in urban areas. In Addis Ababa, according to the census, the unemployment rate was 10.5 per cent in 1984. Approximately 85 per cent of those unemployed were first time job seekers and unemployment rates were significantly higher among youths (21.6 per cent) than those older than 25 years (6 per cent). However, the broad definition of

economically active used in the census^{25/} is thought to significantly underestimate the level of unemployment. A survey undertaken in 1981 estimated that there were 373,000 urban unemployed and the TYPP document argued, on the basis of the number

25. The census defines those in full-time employment as those who had worked for fourteen hours in the previous week. No reference is made to the type of work or employment status.

Table 5.1: Total and economically active population, 1975, 1987 and 1995
(Thousand persons)

	1975	Per cent	1987	Per cent	1995a/
Rural	30,485.7	89.8	41,105.4	89.4	51,929.5
Urban	3,472.6	10.2	4,853.3	10.6	6,131.3
0 to 14 years	15,807.7	46.6	21,387.6	46.5	27,019.5
15 to 64 years	16,706.9	49.2	22,619.0	49.2	28,575.2
Older than 64 years	1,443.7	4.3	1,952.1	4.2	2,466.1
Economically active	14,663.2	43.2	19,814.9	43.1	25,032.7
Total Population	33,958.3	100.0	45,958.7	100.0	58,060.8
Male	9,521.7	64.9	12,845.8	64.8	16,228.4
Female	5,141.5	35.1	6,969.1	35.2	8,804.3
Urban	1,106.8	7.5	1,539.4	7.8	1,944.8
of which:					
male	695.4	4.7	929.3	4.7	1,174.0
female	411.4	2.8	609.2	3.1	769.6
10 to 20 years	379.9	2.6	487.1	2.5	615.4
25 to 49 years	615.3	4.2	882.2	4.5	1,114.5
older than 50 years	116.6	.8	169.7	.9	214.4
Rural	13,556.6	92.5	18,075.9	92.2	22,835.8
of which:					
male	8,826.4	60.2	11,716.0	59.1	14,801.1
female	4,730.2	32.3	6,359.9	32.1	8,034.6
10 to 20 years	5,284.7	36.0	7,132.2	36.0	9,010.3
25 to 49 years	5,815.7	39.7	7,848.6	39.6	9,915.3
older than 50 years	2,456.2	16.8	3,295.1	16.6	4,162.8
Economically active	14,663.2	100.0	19,814.9	100.0	25,032.7

Source: CSO, PDR Ethiopia: Facts and Figures, 1987.

a/ Projection based on the proportion of total population in category in 1987.

of job seekers registered with MOLSA's 36 employment exchange offices, that the number of urban unemployed was closer to 500,000. From 1980 to 1989 the residual number of registrations after appointments at MOLSA labour exchanges averaged 59,000 persons per year, 76.5 per cent of the total number of registrations. The cumulative total of those remaining on the employment exchange registers has increased at a rate of 13.5 per cent per year since 1979 and now stands at 668,835 (Table 5.2). Admittedly not all of those registered are still seeking employment: MOLSA estimates that at least 10 per cent of those registered will have found work through the Personnel Services Commission (PSC), joined small-scale enterprises or been conscripted into the armed forces. Nevertheless, the Table 5.2 indicates the scale of the problem. More revealing at the human level, is the observation that five hundred people apply for each unskilled job on the first day of an advertisement being posted in an employment exchange.

Table 5.2: Registered unemployed and appointments, 1979 to 1989

	1979	1982	1984	1986	1988	1989
Registered	230,601	57,693	54,692	52,594	55,288	51,330
Placements	22,107	15,728	15,274	12,133	10,751	7,980
Annual surplus	208,494	41,965	39,418	40,461	44,537	43,350
Cumulative total of unemployed	208,494	365,642	446,216	532,985	625,485	668,835

Source: Based on MOLSA, Employment Service Information, October 1989.

Ethiopia's unemployed have no access to social security. They subsist in a twilight economy of small-scale trading, occasional employment and dependence on employed relatives. Among these groups household incomes are horrifyingly low. A recent survey of Kebele 25 in Addis Ababa conducted for ILO revealed that average monthly incomes were Birr187 (\$90) per household and Birr25 (\$12) per inhabitant though the distribution was highly skewed and the median income per household was only Birr138 (\$66) per month. Unemployment related urban poverty and the frustration of unemployed youths presents the government with one its most pressing social problems.

Training

As is characteristic of most African countries, the problem of urban unemployment exists alongside a shortage of adequately trained personnel. Although the number of persons registering each year for professional and technical jobs has consistently exceeded the number of placements in this category (Table 5.3), on several occasions the number of appointments within the managerial and administrative category has exceeded the number of registrations that year and the size of surplus registrations in other years is relatively low. Moreover, the MOLSA classification hides wide disparities in the supply and demand for skilled staff, particularly those of degree and diploma level. The number of graduate students requested by the MOI from the ONCCP (which allocates all graduates to the public sector on the basis of requests made annually by each Ministry) greatly exceeds the number allocated. This is especially true of trained administrative and technical personnel of diploma level and engineers and managerial personnel with degrees (Table 5.4). The shortage of professional and skilled staff is reflected in the structure of employment in the MOI supervised industries (see Table 2.0). Professional workers accounted for less

Table 5.3: Ratio of number of persons registering as unemployed to number recruited by occupational category, selected years

Category	1980	1983	1986	1987	1988	1989
Professional and technical workers	5.24	2.64	5.41	4.78	3.89	3.00
Administrative and managerial workers	1.39	0.72	2.24	2.63	0.84	1.55
Government executive and clerical workers	8.82	8.66	11.62	15.10	16.01	17.65
Sales workers	1.67	0.85	0.21	0.52	0.11	0.08
Service workers	1.72	1.47	1.39	2.73	0.98	0.66
Agricultural workers	3.99	5.69	6.61	5.72	11.20	11.29
Production, transport & equipment operators	2.58	2.93	2.26	3.43	3.54	2.83
Unskilled workers	5.31	2.39	2.74	3.05	2.43	6.36
Total	4.71	3.56	4.33	5.67	5.14	7.35

Source: Based on MOLSA, Employment Service Information, October 1989.

Table 5.4: Ministry of Industry requests for and supply of diploma and degree graduates by subject area, 1984/85 to 1988/89

Course and qualification	Deficit/		
	Requested	Supplied	surplus
Administration	646	219	-427
Technology	831	339	-492
Science	14	13	-1
Total number of diploma graduates	1,491	571	-920
Engineering & architecture	449	90	-359
Science	85	118	33
Finance & management	555	231	-324
Other subjects	6	8	2
Total number of degree graduates	1,095	447	-648

Source: Based on Table A-0.

than 2 per cent of the total work-force in 1985, semi-professionals 3.5 per cent and skilled workers 5.9 per cent. Over 70 per cent were unskilled.

While the proportion of unskilled and semi-skilled workers employed is relatively high, there are substantial disparities between the numbers of registrations and placements of semi-skilled and unskilled staff. For instance, 17.6 persons were registered for each clerical appointment, most of them were secondary school graduates. (The deficit of sales and service workers reflects the preference of suitably qualified school graduates for clerical work).

Since the Revolution priority has been given to the expansion of educational opportunities for the masses. As a result of nation-wide literacy campaigns, the literacy rate has increased from 5 per cent in 1970 to 35 per cent in 1986. Access to basic education has been improved by the construction of 4,700 new primary schools from 1975 to 1986. Primary school enrolment increased by 155 per cent over the same period. Nevertheless, the primary school participation rate is still only 36 per cent - compared with 18 per cent in 1974 - one of the lowest levels in Africa. Furthermore, the rapid expansion of educational facilities has, to some extent, been achieved at the expense of quality. The student - teacher ratio has, for instance, increased from 39 to 48 and, to accommodate increasing numbers of students, a shift system has been introduced which means that each child receives on average only four hours of instruction per day. This may account for the high dropout rate: in 1986 almost 40 per cent of school leavers had only attended first grade. The level of functional illiteracy is relatively high. Many students move into higher-level training programmes or employment with low levels of basic skills and poor study habits and so are unable to benefit fully. As a result the economic returns to investment in education and training are much lower than they could be. The planned 120 per cent increase in primary school attendance by 1994, raising participation rates to 66 per cent, is likely to exacerbate these problems.

Table 5.5: Student enrolment educational institution and level, selected years

School	1975	1982	1986	Percent	1994	Percent
Grade 1-6	957,301	2,374,362	2,448,778	78.4	5,248,000	80.2
Grade 7-8	124,584	248,704	363,132	11.6	879,100	13.4
Grade 9-12	64,213	238,428	292,385	9.4	387,300	5.9
Technical schools		4,100	4,800	0.0	6,000	0.0
Further education	8,200	14,985	18,436	0.6	28,740	0.4
Total	1,154,298	2,880,579	3,122,731	100.0	6,543,140	100.0

Source: CSO, PDR Ethiopia: Facts and Figures, 1987 and Provisional Military Government of Socialist Ethiopia, Ten Year Perspective Plan, 1984.

Secondary school attendance has also increased dramatically since the Revolution, though the proportion of students in junior and senior secondary school remains low (11.6 per cent and 9.4 per cent respectively in 1986). The government has ambitious plans to eliminate school dropouts before the sixth grade by 1990 and increase attendance at junior secondary schools (grades 7 to 8) so that 80 per cent of the school leavers will have attained grade eight by 1993. Attendance at senior secondary schools will increase at a slower rate in line with the government's policy to concentrate resources in basic education.

While possession of a School Leaving Certificate is a sine qua non of clerical employment or entrance to higher education, the rapid growth in the number of secondary school leavers has outstripped employment opportunities. The proportion of those with grade 9-12 education registering with MOLSA appointed each year has fallen from 22 per cent in 1984 to 9 per cent in 1988 and 5 per cent in 1989.

In view of the limited number of employment opportunities available for those with an academic secondary education and the shortage of middle-level technical personnel, the government has sought to include an element of vocational training in primary and secondary schools by introducing the "General Polytechnic School Syllabus" alongside traditional comprehensive secondary education. On paper this gives children a foundation in technical skills in Grades 1-6, metal and woodwork classes from grades 7 to 10 and options in industrial, construction, clerical and agricultural skills from grades 10 to 12 (Table A-0, summarised in Table 5.6). About one quarter of class time is devoted to technical subjects for those in the technical stream in grades 9-12.

**Table 5.6: Number of graduates from Technical and Vocational Schools
by broad subject classification, 1987 to 1990**

Subject	1987	1988	1989	1990	Total	Percent
Industrial skills	1,103	1,418	978	933	4,432	60.9
Clerical and administrative	491	658	104	157	1,410	19.4
Construction skills	184	157	166	180	687	9.4
Other	148	225	186	190	749	10.3
Total	1,926	2,458	1,434	1,460	7,278	100.0

Source: Based on Table A-0.

In practice, however, Higher General Polytechnic Education (HGPE) (Grades 9-12) is only available at 15 schools, with an enrolment of about 4,500 students (less than 2 per cent of the secondary school population). Competition for entrance is intense: approximately ten students applied for each place in the late 1980s. The Ministry of Education has plans to build five new technical and vocational schools during the TYPP (1984-93) period, increasing in the number of students enrolled to 6,000 by 1993. The new schools will offer specialisations in agricultural subjects and so change the balance of the HGPE output, which is currently biased towards industrial and clerical skills. At present, about 35 per cent of the graduates from HGPE take the ESLC and go on to higher education. The remainder enter the job market. Formerly HGPE graduates were allocated to public sector employers through the ONCCP. Now students find work through the employment exchanges. Although HGPE graduates have a considerably better chance of finding work than their counterparts from comprehensive secondary education, there is some concern that they do not always enter employment relevant to their skills. The removal of ONCCP supervision has made it difficult for the MOE to plan the output of future generations of graduates on the basis of the projected demand for skills. It has also removed a channel for feedback from employers on the content of courses. Regular consultations between the MOE and employers would alleviate this problem.

Table 5.7: Number of students in diploma and first degree courses in higher education institutions, selected years

Subject	Actual 1983		Actual 1986		Planned 1994	
	No.	Percent	No.	Percent	No.	Percent
Technology	1,701	10.6	1,740	9.6	6,645	23.6
Natural Science	2,814	17.5	3,725	20.5	2,905	10.3
Social science	5,117	31.9	5,695	31.4	5,620	20.0
Pedagogical science	2,142	13.4	2,248	12.4	3,180	11.3
Medicine	1,625	10.1	1,810	10.0	4,890	17.4
Agriculture	2,642	16.5	2,939	16.2	4,870	17.3
Total	16,041	100.0	18,157	100.0	28,110	100.0

Source: CSO, PDR Ethiopia: Facts and Figures, 1987 and Provisional Military Government of Socialist Ethiopia, Ten Year Perspective Plan, 1984.

There is an acute shortage of professional managerial and technical staff with degree and diploma qualifications in the industrial sector, reflecting both the limited number of students in further education (18,400 in 1986, less than one per cent of the total student population), the predominance of liberal arts student enrolment and the academic orientation of many of the technical subjects taught (Table 5.7). In 1986 only 9.6 per cent of students in further education were enrolled in technology courses. The total output of graduate engineers from 1973 to 1985 was only 1,231, of which only 142 had studied electrical engineering and 266 mechanical engineering.

The government proposes to increase both the total number of students in further education and the proportion of students studying technology during the TYPP (1984-93). This will be achieved by the expansion of facilities at existing technology institutes (the Technology Faculty at Addis Ababa University and Bahir Dar Polytechnic Institute) and the construction of six new specialist institutes in the fields of water technology, construction mining, electricity and electronics and chemistry. The completion of a Teachers' Technical College at Nazareth in 1990, with a capacity of 800 students, will also ensure that higher education meets the demand for qualified technology teachers at lower levels of the education pyramid. Efforts are also being made to structure further education courses so that are of greater relevance to the industrial sector. A step in this direction was the creation of a Co-operation Programme between the University of Addis Ababa and the MOI in February 1986. This has provided for the sponsorship of university students by the Corporations, seminars and research links between academics and industry.

Within the industrial sector overall responsibility for the development and implementation of technical training programmes is vested in the Ethiopian Management Institute (EMI), functioning directly under the Council of Ministers. When the institute was restructured in 1983, the National Productivity Centre (NPC), which provides training in industrial skills, was detached from MOLSA and brought under its supervision. The NPC remains the central training institute for the Corporations under MOI supervision. Corporation production and supervisory staff with educational qualifications above grade 8 are sent to the NPC on in-house training courses, financed from the Corporations' budget. There are over twenty courses available in such fields as general mechanics, welding, plumbing, sheet metalworking, electricity, leather and shoe manufacture, wood work and construction with a duration of between 4 to 24 weeks. The NPC's capacity is limited to about 450 trainees per year which is well below the needs of industry for training of new recruits and upgrading staff. To extend access to training the NPC has established an in-service training scheme implemented by corporation personnel trained at the centre. Corporations have found this to be a cost effective method of

upgrading the skills of lower-level production staff and of effectively integrating training into the day-to-day activities of the shop floor.

In addition to the facilities available at the NPC, four public corporations have established their own training centres to provide specialist courses: the Ethiopian Printing Corporation Institute of Graphic Art, the Ethiopian Sugar Corporation Training Centre, Akaki Textile Mill Training Centre and a similar institute at Dire Dawa and the Akaki Spare Parts Factory Training Centre opened in 1988. Although small scale (with a capacity of 50-100 trainees at one time) and hampered by a shortage of equipment and suitable teaching staff, the training centres have brought about a significant improvement in shop-floor productivity by providing short (2 days to six months) courses in relevant production skills. They offer an opportunity for unskilled workers to upgrade and training for supervisory staff. Both the National Food and National Leather and Shoe Corporations have plans to develop training centres of their own, the latter with technical assistance from the Italian government. Every encouragement should be given to such institutions which provide a training input at shop-floor level for all workers.

The low level of technological development in Ethiopian industry (see Section 2.0) is mirrored in the training facilities available. The introduction of modern technology and new production skills must, therefore, be accompanied by training through technical assistance or study abroad. In FY1988, MOI supervised corporations benefited from 388.9 man months of manpower training through technical assistance valued at a Birr2.9 million. In December 1989 there were 48 MOI employees training abroad, 41 of them studying technology or production skills the remainder management and finance. Considering the size of Ethiopia's industrial sector and the skills constraint in the field of technology this number is extremely small. There is considerable scope for the expansion of manpower training through technical assistance.

Prior to 1983, manpower development planning concentrated on lower and middle level personnel and neglected management training. When the Ethiopian Management Training Institute (ETMI), which had formerly provided management training for senior public corporation employees, was restructured in 1983 its mandate was broadened to include training in all branches of the economy and in public sector administration. In recognition of the operational difficulties faced by corporations, the EMI was also instructed to identify and resolve the managerial problems through consultancy services, formulate management policies and provide training in management methods. Owing to inadequate facilities and the shortage of trained personnel, EMI trained only 130 managers and 40 administrators in 1985-86. The EMI is now seeking technical assistance to help in its ambitious plans to expand the number of

its staff, direct training of management and administrative staff, provision of consultancy services and the number of personnel trained through "Guided Transmitted Training" (GTT) (staff instructed as trainers by the Institute). Over the period 1987 to 1991 the EMI plans to provide training to 320 senior managers, 960 middle managers and 1,920 supervisors and 2,300 staff through GTTs (see Table A-0). If high standards of training are provided and EMI's recommended policy changes are implemented, the EMI will help revitalise management in the public sector.

The government has ignored the needs of the private sector for skilled personnel and training facilities. All university graduates are allocated to the public sector immediately after graduation. Until recently this was also the case with graduates of vocational training institutions. As a result the private sector had great difficulty in recruiting skilled staff. Private sector employers have relied on on-the-job training to develop their workforce. This has limitations, since small-scale firms lack the staff necessary to institute foundation programmes that will enable them to upgrade those with only basic skills. However, access to manpower trained in existing vocational institutions will not be a panacea. Most small-scale entrepreneurs also need staff trained to carry out specific tasks, yet such skills are not catered for in the formal education institutions.

If the government is to cater for the needs of small-scale private sector firms, a flexible approach is needed. Small-scale enterprises require a better educated recruits with a good foundation through generic-formal education. Specific skill training could then be provided by out-reach courses or short-term courses in vocational institutions where economies of scale can be generated by training staff from numerous small firms. HASIDA already provides such services on a small-scale. Its facilities and capacity could be expanded. Part of the cost of training could be borne by employers though some government subsidy will be necessary.

Human resource development is essential if the industrial sector is to expand and operate effectively in a competitive environment. Industry needs a better quality work force, a workforce that is motivated, flexible, capable of improving the quality of its work and productive. At the same time the government must ensure that investment in education and training brings an economic return. At the lower levels of the educational pyramid this objective may run counter to the social objective of education for all. Without the means support a comprehensive education programme, the rapid growth in student numbers has resulted in a deterioration in the quality of education to such an extent that the returns on the investment must be doubted. Numbers are no substitute for quality, but there must be a trade-off since there the economy suffers from an acute shortage of skilled and professional staff.

Efforts to overcome the acute shortage of skilled and professional staff are hampered by the absence of a comprehensive plan which relates the needs of industry - and the economy as a whole - to both the content of education and output of students at every level. Poor planning results in a mismatch of resources and needs and thereby uses the government's limited financial resources inefficiently. There can be no doubt that both the quality and supply of appropriately trained manpower could be improved by identifying the economy's manpower needs on a systematic basis and tailoring the financial resources of educational institutions to suite. Such planning must start with a needs assessment and such an assessment should be conducted from the bottom up. In the past, there has been a tendency for enterprises to exaggerate their manpower requirements, knowing that only a proportion of their needs will be filled from the quota. Closer consultation between the ONCCP, educational advisors and public sector managers is needed if the plan is to be effective. At present there is little communication between managers and educators. Managers complain that the training available in schools and universities is ill-suited to the needs of the industrial sector. Such consultation will not happen automatically, it must be institutionalised.

Political and economic reform could also ameliorate the skills shortage in Ethiopia by attracting home large numbers of professionals now resident abroad. During the 1970s and 1980s Ethiopia suffered from a brain drain of unprecedented proportions in the country's history. There are thought to be about 20,000 Ethiopians with further degrees living in the United States of America and similar numbers in Europe: a far larger number than can be found in Ethiopia. While many of them left Ethiopia for political reasons, higher salaries and better career prospects play an important part in delaying their return. It may not be realistic to expect many of these economic and political refugees to return to Ethiopia. Certainly, few will return to government service since the salary packages the government can afford simply are not attractive enough^{26/}.

On the other hand, entrepreneurs resident abroad may be willing to invest in Ethiopia. Their experience in a market oriented economic system would be invaluable to Ethiopia as the economic order changes. They could also provide an injection of funds into the small-scale industrial sector. Potential profits will be one attraction. But, as the experience of Yemen indicates, the desire to offer employment to relatives still resident in Ethiopia may be another important motivating factor. It is clear

26.. The Economic Commission for Africa and International Migration Office run a joint programme entitled "Return of Skills Programme for Africa" which seeks to provide short-term benefits to expatriate Africans to encourage them to return to full time employment on the continent. This may help overcome this problem to some extent.

from the discussions preceeding the WPE's approval of the reform package in March 1990, that expatriate Ethiopians were one of the target audiences for the new investment codes. Many were favourably impressed. Their willingness to invest in Ethiopia will, however depend on the progress of the promised political reforms as well as economic developments: in particular the establishment of a multi-party democracy and resolution of the secessionist problem that has caused instability and fighting for more than twenty years.

5.2 Agricultural resources

Ethiopia is primarily an agricultural economy. In 1986/87 agriculture generated 42.3 per cent of GDP, agricultural commodities and livestock accounted for 93 per cent of exports and the agricultural sector employed about 86 per cent of the work-force. The agricultural and livestock sectors are also an important source of raw materials for the industrial sector: MOI supervised industries taking more than 50 per cent of their inputs from the agricultural and livestock sectors accounted for nearly 60 per cent of the total MVA generated in 1987/88 (see Section 2.7).

Given the central role agriculture plays in the economy, the poor growth record of the past decade is a matter of great concern. Agriculture's contribution to GDP fell by an average annual rate of 0.4 per cent over the period 1980 to 1988, even though the agricultural sector benefited from 23 per cent of development expenditure during the five years to 1988. According to FAO estimates, gross agricultural production was 5.8 per cent higher in 1988 than the average for the period 1979-82 and food production was 8.5 per cent higher. In per capita terms, however, total agricultural production and production of food crops fell by 7.7 and 6.2 per cent respectively over the same period (Table 5.8). Ethiopia ceased to be self-sufficient in food grains in the mid-1970s and since then the food deficit has increased steadily. By 1987 the cereals deficit for a "normal" year was thought to be about 500,000 tonnes. During drought years this deficit increases markedly. After a disastrous harvest in 1989, the deficit is expected to reach 1.1 million tonnes in 1990.

Table 5.8: Agriculture, food and livestock production indexes, 1977 to 1988
(Average 1979 to 1981 = 100)

	1980	1981	1982	1983	1984	1985	1986	1987	1988
All crops	98.8	98.7	106.6	101.5	88.5	96.0	106.0	102.5	105.8
- per capita	98.7	96.5	102.3	95.6	82.2	87.9	94.6	90.4	92.3
Food crops	98.9	97.7	106.8	100.0	89.9	96.6	106.8	103.7	108.5
- per capita	98.8	95.8	102.5	94.2	83.5	88.5	96.1	91.5	93.8
Livestock	100.2	101.5	102.6	103.9	103.9	109.5	113.1	114.4	116.7

Source: FAO, Agricultural Production Statistics, 1988

In order to meet these food grain deficits, Ethiopia has become increasingly dependent on imports. Grain imports increased from 64,000 tonnes in FY1981 to 550,000 tonnes in FY1987 and are thought to have reached 1 million tonnes in FY1988. Emergency food aid makes up a large part of the deficit during drought years but since 1984 the government has had to step up commercial imports of grain during years of normal rainfall. In 1985/86 commercial grain imports amounted to 300,000 tonnes as compared with an average of 60,000 tonnes per year in the period 1979/80 to 1983/84. Owing to constraints on Ethiopia's foreign exchange budget commercial food imports have not completely covered the food deficit and per capita cereal consumption is thought to have declined.

Agriculture's poor performance may be ascribed both to physical and economic constraints. At present about 16.5 million ha are under cultivation, amounting to 15.8 per cent of the land surface, though about 84 million ha are considered cultivable. Nearly three quarters of the cultivated land is in the highlands, where population densities are high, estimated at one rural household per 5 ha of potentially cultivable land^{27/}. Large areas of the lowlands could be cultivated after clearance or with irrigation (in 1984 there was only 89,000 ha of irrigated land but 2.2 mn ha were considered irrigable). However, the potentially cultivable area still amounts to only 7.2 ha per rural household for the country as a whole. High population densities force intensive cultivation practices on peasant farmers, causing environmental degradation. Soil loss from cropland is currently estimated at 40 tonnes per ha per year. At current rates of erosion, 18 per cent of existing cropland will be uncultivable by the year 2010. Droughts in 1973-74 and 1984-86 have also had a dramatic impact on agricultural production, particularly in the northern regions. A drought in 1989 caused 80 per cent harvest losses in Eritrea and 50 per cent losses in Tigray. At the end of 1989 the World Food Programme warned that 4 million Ethiopians were threatened by famine and the government had appealed for international assistance in mounting its emergency relief effort. WFP estimated that the cereal deficit for 1990 amounted to 1.1 million tonnes, about one quarter of total consumption.

In order to overcome these environmental constraints the government has concentrated its resources in the 161 surplus producing woredas identified in 1987, all of which lie within the highland zone. Priority has also been given to the expansion of the cultivable area. The Three Year Development Plan (TYDP, FY1987-FY1989) set an ambitious target of 930,000 ha of land to be brought under cultivation - amounting to a 14 per cent increase -

27. Daniel Gamachu, "Environment and Development in Ethiopia", in *Beyond the Famine*, Angela Penrose (Ed.), Food for the Hungry International, January 1988.

over the three year period. It also envisaged that the area under irrigation would double. Neither of these targets have been achieved. At the same time the government sought to redistribute the population by the resettlement farmers from the densely populated northern regions in virgin lands to the south and east. This programme began in November 1984 and by March 1986, when it was temporarily suspended, 800,000 people had been moved. In 1988, the government announced its intention to resume the resettlement programme, though at a slower pace. The government planned to resettle 60,000 families in 1989.

A radical land reform programme that nationalised all agricultural land and redistributed it more equitably between peasants began in 1975. The land reform programme also brought large plantations under state ownership and established the first rural service and producers cooperatives. Despite the priority given to the socialisation of agricultural production, peasant farmers cultivating their own plots still predominate (in 1986 they accounted for 92 per cent of the cultivated area). By 1987 about half of the peasant farmers were members of service cooperatives (SCs), which provided access to inputs, marketing facilities and credit at preferential rates. Progress in the development of producer cooperatives (PCs), in which land and animal ownership is vested in the co-operative, has been much slower. In 1987 there were only 2,922 PCs covering about 4 per cent of the cultivated area and 3 per cent of the rural population, despite the availability of a variety of incentives such as priority access to credit and inputs.

State farms have taken the lion's share of resources, even though they account for only 4 per cent of the cultivated area. Over the period 1980-1985 state farms were allocated 40 per cent of government expenditure in the agricultural sector and this share was to increase to 63 per cent under the TYDP (FY1987-FY1989). State farms have also received a disproportionately large share of credit, fertilisers and improved seeds (80 per cent, 76 per cent and 95 per cent of the total for the agricultural sector respectively in 1982). As initially conceived, the state farms were to produce export crops and the raw materials for industry. However, the prevailing food deficit has forced them to divert land to cereal cultivation and in 1986 only 20 per cent of their land area was used for the cultivation of cash crops. The results of this concentration of resources have not been encouraging. Yields are not appreciably higher than those on peasant farms except in the case of wheat and barley cultivation. Considerable sums have been spent on mechanisation, with little impact on productivity or profitability. Indeed, many farms have regularly incurred losses even though they benefit from significantly higher producer prices than the peasant sector.

Despite efforts to promote a "minimum package" of improved seeds, fertilisers, credit facilities and extension services for

peasant farmers, such inputs are still largely unknown in the peasant sector. One recent study estimated that only 2 per cent of farmers used improved seeds and 10 per cent used chemical fertilisers. If one considers that improved seeds can increase yields by between 45 and 100 per cent, there is a strong case for extending their use in the peasant sector. Poor communications are part of the problem - three quarters of Ethiopian farms are half a days walk away from the nearest all-weather road. Since 1985, villagisation, the removal of farming families from isolated farmsteads to newly built villages, has been seen as the answer to this problem. By the end of 1989 the government anticipated that 15 million people would have been resettled in this manner. But the peasant sector has also suffered from under-funding.

Shortages of oxen and modern tools are also a major constraint on productivity. Nearly 40 per cent of Ethiopian farmers have no oxen, even though Ethiopia reputedly has more cattle per capita than any other African country. Since 1987 efforts have been taken to establish tractor rental centres but these are an extremely expensive substitute for animal power. The development and proliferation of better hand tools - sharp sickles, scythes and plough shares - might be a more cost effective means of increasing labour productivity.

Marketing and pricing policies have also been identified as constraints on production in the peasant sector. Peasants must sell part of their harvest to the Agricultural Marketing Corporation (AMC, established in 1976), at prices that were fixed from 1979 until December 1987, when a 10 per cent increase was granted. AMC prices are consistently lower than those on the private market and import parity prices. Licensing restrictions on grain traders, the requirement that grain traders sell 40 per cent or more of their purchases to the AMC and the AMC's virtual monopoly on inter-regional trade has meant that market prices are also artificially low. Low producer prices relative to the price of inputs discouraged farmers from using fertilisers. Indeed, since 1979, when there was a sharp increase in fertiliser prices, there has been a marked decline in fertiliser use in the peasant sector. More importantly however, low producer prices have led to a reduction in farm incomes, discouraged farmers from making efforts to increase output and led some to withdraw from the market or switch to commodities that are not controlled by the AMC (livestock and vegetables, for instance). The acute shortage of consumer goods in rural areas has reinforced these trends, since there is little incentive to increase cash income.

Greater emphasis has been placed on peasant agriculture since December 1987 when the government introduced a number of reforms to the marketing system. Alongside a rise in the price paid by the AMC for certain crops, the government announced that AMC quotas would be reduced, allowing farmers to sell a greater proportion of their harvest on the free market, and private traders would be be

allowed to transport grain between regions. This has increased market prices significantly and so encouraged farmers to step up production. The government has also resolved to increase the supply of inputs to the peasant sector, quadrupling fertiliser orders to 200,000 tonnes in 1988. Shortage of foreign exchange to purchase agricultural inputs is a major constraint on this policy (in 1989 the government could only fund imports of 42,000 tonnes of fertilisers while 172,000 tonnes were needed^{28/}). Consequently, the development of the peasant sector could benefit from international assistance. Both the EC and World Bank have already provided funds for "minimum package" projects and infrastructural developments in the core agricultural regions. Other donors are expected to follow suite.

The reform package approved by the Central Committee of the Worker's Party of Ethiopia in March 1990 goes far beyond earlier efforts to tinker with the central planning system. If fully implemented it promises to transform the agricultural sector by restoring peasant agriculture and the free market as the leading principals of government agricultural policy. Although land is to remain under state ownership, the usufruct rights of peasants will be recognised and they may be transmitted to heirs. Peasants will be allowed to hire workers - a crucial reform given the seasonality of agricultural activity, even given the small size of peasant holdings. Cooperatives may be dissolved on the agreement of their members. The state's purchasing monopoly for agricultural products is to be abolished and a free market established. Peasant farmers will be allowed to sell their produce to dealers or retail it themselves. Transport inspections to prevent domestic trade in agricultural produce were stopped almost immediately allowing farmers to profit from higher prices in the cities^{29/}. This should provide farmers with an incentive to step up production. The government also announced that private investors will be allowed to establish large commercial farms on concessions granted by the state. Such "plantations", mostly in the Awash Valley, led commercial agriculture in Ethiopia before the Revolution, producing cotton, sugar and other export crops. The most likely target for

28.. In 1990 the fertiliser needs of small farmers were estimated at 204,000 tonnes. The donor community - Italy, the World Bank and the EEC through its sectoral import programme - has stepped in to supply much of this demand.

29.. The immediate result of the government's announcement of a free market in agricultural produce was a reduction in the price of grain in Addis Ababa by some 30 to 60 per cent, owing to an influx of grain from the rural areas. Nevertheless, peasant farmers still benefitted since the market price in Addis Ababa was still two to three times higher than the price payed by the AMC. Consequently, the reform benefitted both consumers and producers.

this form of investment will be loss making state-farms in the more fertile areas of the country.

Notwithstanding the economic reforms, which have addressed many of the complaints of peasant farmers, the agricultural sector will continue to face serious structural constraints. Recognition of peasants' rights to land may provide some incentive for them to introduce conservation measures, but it will intensify pressure on the land and raises the prospect of indivision and the dispersal of plots in the future. The poor infrastructure in much of rural Ethiopia - a shortage of roads, storage and processing facilities - seriously limits the scope of commercialisation. Perhaps most important, a shortage of foreign exchange will continue to hamper the peasant sector's efforts to intensify production through the introduction of modern inputs. It may also undermine the effectiveness of producer price rises as an incentive. Owing to the shortage of consumer goods in rural cooperatives, farmers may decide their is little point in increasing production. They may choose to maintain their income at the present subsistence level by producing less. Certainly, this was Tanzania's experience when it introduced a similar package of reforms^{30/}. Clearly the cooperation of donors is needed if the reforms are to be effective, both through investment in essential infrastructure and to ensure that the retail outlets have access to the goods that farmers wish to purchase.

Food crops

About 82 per cent of the cultivated area was under cereals in 1985/86. Traditionally, the most important cereal crop in the highlands was teff, a fine grain used in the cooking of injera, the Ethiopian staple, while in the lowlands sorghum has been favoured (see Table 5.9). In recent years, however, cultivation of maize has expanded enormously and it is now the single most import cereal crop. From 1980/81 to 1986/87, the area under maize increased by 46 per cent and the maize harvest by 88 per cent. By 1986/87, maize provided 29 per cent of the cereal harvest, whereas the two traditional crops, teff and sorghum, provided only 18.2 per cent and 17.9 per cent respectively. Much of the expansion of maize cultivation has taken place on state farms, where maize is by far the most important cereal, but there has also been a tendency for peasant farms to substitute maize for sorghum. Another notable recent trend has been the expansion of the area under wheat, which increased by 35.2 per cent over the period 1980/81 to 1986/87. Wheat production has increased by 34.6 per cent over the same period. This trend is a response to the changing urban diet as bread becomes more important as a staple.

30.. David Bevan, Arne Bigsten, Paul Collier and Jan Willem Gunning, East African Lessons on Economic Liberalization, Trade Policy Research Centre, 1987.

Production of pulses reached a peak of 933,650 tonnes in 1979/80, when they were cultivated on about 13 per cent of the area under food crops. Since then the area under pulses has fallen by 13 per cent while production has dropped by 37 per cent to only 584,190 tonnes, largely as a result of declining yields and the substitution of cereals for pulses on peasant farms. There has also been a change in the pattern of production. As production of horsebeans, chick peas and field peas has fallen (by 37 per cent, 41 per cent and 63 per cent respectively over the 1979/80 to 1986/87 period), the output of haricot beans has increased (by 33 per cent). The marked drop in pulse production and increasing domestic consumption have eroded exports. Over the period 1971/72 to 1973/74 exports of pulses averaged 109,900 tonnes, falling to 33,732 tonnes in the year when production peaked, 1979/80, and 4,427 tonnes in 1986/87.

Table 5.9: Agricultural production by crop type, selected years
(Thousand tonnes)

Crop	1976/77	1979/80	1981/82	1983/84	1984/85	1985/86
Cereals	4,340	6,396	5,392	5,527	3,984	4,450
Pulses	622	1,010	820	712	474	442
Oilseeds	---	89	82	99	98	95
Industrial crops	62	63	69	55	76	90
Others	80	29	30	40	47	42

Source: National Bank of Ethiopia, Annual Report, 1985/86, (June 1988).

Production of oilseeds stagnated at around 95,000 tonnes - fluctuating between 77,000 and 118,000 tonnes - from 1979/80 to 1985/86 even though the area under oilseeds increased steadily from 187,000 ha to 276,000 ha. Declining yields have been ascribed to lack of inputs within the peasant sector, a situation aggravated by low producer prices which have made it unprofitable for farmers to purchase fertilisers. As production has stagnated an increasing proportion of the harvest has been directed towards meeting the domestic demand and exports have fallen. Exports of oil seed and oil seed cake averaged 142,700 tonnes in the period 1972/3 to 1973/74 but averaged only 50,800 tonnes in the period 1983/84 to 1984/85 and only 14,600 tonnes in 1986/87. The decline in exports was particularly drastic in the case of sesame. In 1974 exports of sesame amounted to 84,600 tonnes, netting \$38 million in foreign exchange, nearly 15 per cent of total foreign exchange earnings. By 1986 recorded production had slumped to just over 100 tonnes. Cultivation is largely restricted to the Humera. Before 1974 sesame was cultivated on estates and peasant farms but production virtually came to a stop in the late 1970, when the controls on the employment of labourers were introduced: harvesting sesame is a labour intensive activity that requires a large seasonal work-force. In 1979 the government attempted to revive production by setting up a state farm. This project met with little success.

Despite the diversion of oilseeds to the domestic market, per capita consumption of vegetable oils and fats is extremely low in Ethiopia, around 1 kg. Under these circumstances the government is justifiably concerned that exports of oilseeds would have a detrimental impact on nutrition. However, faced with falling coffee prices the government has shown renewed interest in oilseeds as an export crop.

Table 5.10: Area under and production of food crops, 1980/81 and 1986/87

Crop	Crop area '000 ha			Production '000 tonnes		
	1980/81	1986/87	Percent change	1980/81	1986/87	Percent change
Teff	1,362.0	1,379.0	1.2	1,312.1	1,112.2	-15.2
Barley	830.9	956.3	15.1	1,075.2	1,041.3	-3.2
Wheat	536.3	725.1	35.2	613.2	825.6	34.6
Maize	735.5	1,071.7	45.7	948.2	1,788.1	88.6
Sorghum	979.1	985.5	.7	1,410.8	1,091.9	-22.6
Millet	232.9	216.1	-7.2	204.4	188.2	-7.9
Oats	35.2	41.0	16.5	46.4	36.4	-21.7
Cereals	4,711.8	5,374.6	14.1	5,610.4	6,083.6	8.4
Horsebeans	306.5	273.2	-10.9	469.3	306.8	-34.6
Chick peas	149.1	121.0	-18.8	118.3	85.6	-27.6
Haricot	21.0	57.9	175.3	19.7	34.3	74.4
Field peas	169.0	110.3	-34.7	147.7	89.1	-39.7
Lentils	53.3	51.8	-2.9	59.9	31.0	-48.3
Vetch	37.4	52.3	39.8	31.3	37.6	20.2
Soya beans	6.6	1.3	-80.2	1.9	.6	-67.6
Pulses	743.0	667.8	-10.1	848.0	584.9	-31.0
Neug	123.6	139.6	13.0	64.1	47.7	-25.7
Linseed & flax	56.6	76.6	35.4	27.2	36.1	32.5
Fenugreek	4.5	7.4	64.8	2.5	2.5	-1.3
Rapeseed	3.3	5.3	61.1	1.5	4.1	170.6
Sunflower	.8	.8	-2.4	.2	.6	202.8
Groundnuts	-	.6	...	...	.7	...
Sesame	34.7	.3	-99.1	6.5	.1	-98.7
Others	223.4	230.6	3.2	102.1	91.7	-10.2

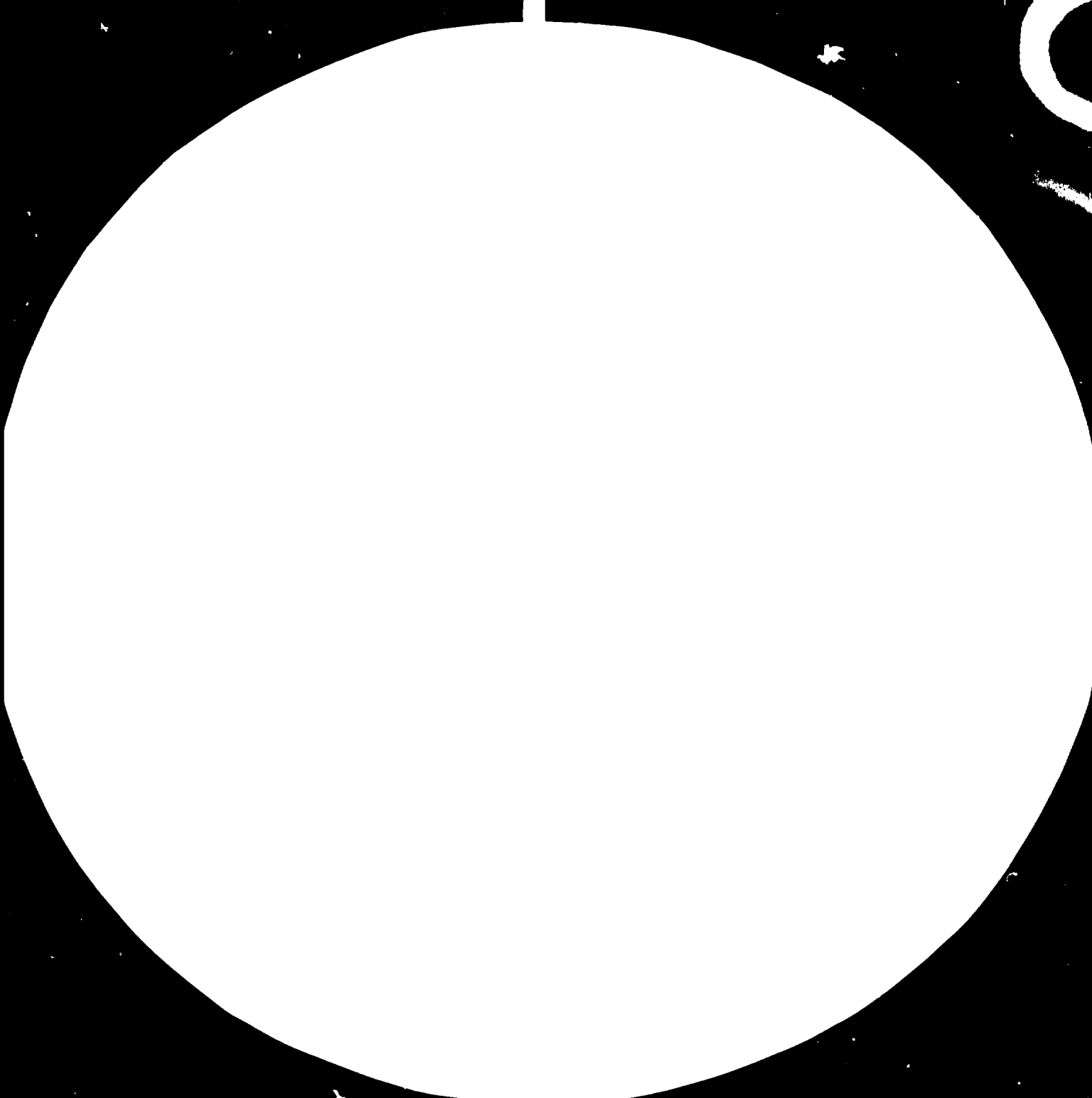
Source: CSO, Ethiopia: Facts and Figures, 1987

A wide range of vegetables and fruit are cultivated by peasant farmers on small horticultural plots, both as dietary supplements and for the market. However, commercial production is dominated by the state owned Horticultural Corporation. No data is available on the output of fruit of vegetables from government sources, though FAO statistics suggest that production of vegetables and melons has increased by about 17 per cent to 569,000 tonnes from 1981 to 1988 and production of fruit increased by about 10 per cent to 218,000 tonnes over the same period. A small proportion of the fruit and vegetable harvest is exported. The volume of fruit and vegetable exports has fallen from an average of 23,800 tonnes in the period 1971/72 to 1973/74 to 5,112 tonnes in 1980/81, rising again to 12,075 tonnes in 1986/87. Efforts are being made to expand exports, particularly in the area of high-value early vegetables and cut flowers which are flown to European markets.

Cash crops

Although peasant farmers produce most of Ethiopia's coffee, the principal cash crop, virtually all the industrial cash crops are cultivated on state farms. These were first formed by the nationalisation of large plantations in 1975 and the area was subsequently increased to over 200,000 ha as virgin lands were cleared and irrigated (3.6 per cent of the cultivated area in 1985/86). It was initially intended that the state farms would specialise in the production of industrial raw materials and cash crops. However, the recurrent grain deficit has forced the government to direct many of the state farms to produce food crops. In 1985/86 only 20 per cent of the area of state farms was under industrial and other cash crops, whereas 70 per cent was under cereals. Competition for land between cereals and cash crops is one of the principal constraints on the expansion of raw material production and the development of processing industries. Furthermore, the performance of state farms has been disappointing. Productivity levels are not significantly higher than those in the peasant sector and many of the farms register losses despite the fact that they are paid higher producer prices than peasants. Low wages and inadequate training have undermined attempts to improve production and managerial methods.

Coffee is Ethiopia's principal export, generating 64 per cent of total export revenues in the period 1981-1987 (see Table A-2). Dependence on coffee as a source of foreign exchange has increased markedly since 1974, when coffee accounted for only 40 per cent of merchandise exports by value, leaving the economy prey to fluctuations in the world market price. In 1986, when coffee prices surged to record heights and the unit value of coffee exports reached 375 per cent of the 1975 value (see Table A-3), this worked to Ethiopia's advantage. But it was only a temporary windfall. Prices declined in 1987 and 1988 and, following the collapse of the ICO export quota in mid-1989, prices plummeted to their lowest level for fourteen years and their lowest level in real terms since





MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS
STANDARD REFERENCE MATERIAL 1010a
(ANSI and ISO TEST CHART No. 2)

the 1920s. There is little prospect of prices recovering in the near future.

Foreign exchange earnings from coffee have also been affected by the fall in coffee production from a peak of 3.8 million bags in 1983 to 2.8 million bags in 1987 and the steady growth of domestic consumption, which has gradually eroded the surplus available for export (Table 5.11). The decline in coffee production in recent years may, to some extent, be explained by the age of the trees, an epidemic of coffee berry disease and insufficient supplies of fertilisers, problems that the government has tried to address through its Coffee Improvement Programme, initiated in 1977. There are, however, indications that small-scale coffee farmers, who account for 95 per cent of coffee production, have begun to reduce the acreage under coffee because of subsistence pressures to cultivate food crops and pricing and taxation policies that have discouraged coffee cultivation. About 90 per cent of coffee production is sold directly to the Ethiopian Coffee Marketing Corporation (ECMC). After taxation, the producer receives about 40 per cent of the fob export price. His share of the domestic consumer price is even smaller, since coffee prices are higher than world market prices in order to reduce consumption and thereby save coffee for export. As a result of price controls, the returns of labour in coffee cultivation have fallen sharply relative to the returns on cereal farming.

To reverse this trend the government increased the price paid to coffee producers from Birr17 per 17 kg bag to Birr39 kg in October 1989. This will restore coffee farmers real incomes to the level they were six years ago and so provide an incentive to increase production. Other measures to increase coffee production focus on the improvement of cultivation methods through extension services for small-scale producers and ambitious plans to expand the area of state farm coffee plantations from 14,000 ha in 1988 to 50,000 in 1993.

Most of Ethiopian production is processed by the sun-drying method and then hulled. Hulling capacity is limited, largely because of the age of machinery. In 1985/86 only 13,000 tons (less than 10 per cent of total production) was processed as washed coffee, which sells at a premium. The government hopes to increase the production of washed coffee to 30,000 tonnes by 1991. Most domestically consumed coffee is roasted and ground at home and exported coffee undergoes no further processing.

In an effort to curtail growth in the domestic consumption of coffee, the government has plans to cultivate tea as a substitute in the domestic market. Two tea plantations and a processing factory have been established by the Ethiopian Tea Development Enterprise (ETDE), with an output of 2,000 tons of tea anticipated in 1990, and the development of five other plantation is planned over the next ten years. Although production is aimed primarily at the domestic market, there are good prospects for the development of some export sales.

Cotton plantations were first established in the Awash valley during the 1960s. Between 1974/75 and 1984/85 the area under cotton increased by 50 per cent to 33,946 ha and production increased by 66 per cent to 74,900 tonnes. This substantial increase in output was achieved by massive investments in irrigation and expenditures on fertilisers and other chemical inputs. Indeed, cotton plantations are one of the principal consumers of fertilisers. Nevertheless, production has fluctuated by up to 25 per cent from year to year and stagnated in the mid-1980s. In 1989, the cotton harvest was only 64,100 tonnes whereas the production target had been set at 104,000 tonnes.

As production increased during the late 1970s exports of raw cotton rose to about 7,600 tonnes in 1980/81 but exports have fallen steadily since then and in 1986/87 all of the harvest was used in domestic production. While the state cotton farms are generally profitable, their solvency has been achieved at the expense of the domestic textile industry. In mid-1989 domestic prices for raw cotton were about 35 per cent higher than those on the world market. Because the public textile mills have to purchase their inputs through official channels they have no opportunity to influence the price of their raw materials. Nor can they guarantee the quality or the timing of deliveries. Badly graded cotton and irregular supplies are a major handicap to efficient production.

Table 5.12: Production of industrial and export crops on state farms, selected years
(Thousand tonnes)

Crop	1975/76	1979/80	1981/82	1983/84	1984/85
Cotton	45.5	60.2	68.9	54.5	74.9
Sisal & kenaf	.6	.5	.1	.7	1.2
Tobacco	.1	.4	.6	.9	1.6
Pepper	.1	1.2	.9	1.7	2.5
Fruit	7.1	22.6	20.1	10.8	14.5
Vegetables	...	4.5	8.5	18.0	30.1
Sugar cane	...	...	...	1,382.0	...

Source: World Bank, Ethiopia: Recent Economic Developments and Prospects for Recovery and Growth, February 1987.

In 1986, about 1.6 million tonnes of sugar cane was produced on two large irrigated, agro-industrial complexes managed by the Ethiopian Sugar Corporation. The largest of these, at Wonji in Shoa, has 10,300 ha under cane and a production capacity of 100,000 tonnes of refined sugar per year. The other, at Methara, has recently been upgraded to a capacity of 95,000 tonnes per year by increasing the area under cultivation from 7,000 ha to 9,000 ha. Production of refined sugar increased from 155,000 tonnes in 1978/79 to a peak of 181,000 tonnes in FY1986 and then fell to 168,000 tonnes in FY1987 and 175,000 tonnes in FY1988. Both the Wonji and Methara sugar complexes are working close to full capacity. However, domestic production falls well short of demand and since Ethiopia imports no sugar this demand currently goes unsatisfied. Although world sugar prices are currently relatively low, the government argues that it would be more economic to satisfy domestic demand by increasing production capacity because the cost of transportation makes importing sugar prohibitively expensive. In February 1989, the government gave the go-ahead for a new \$225 million sugar complex at Finchaa. The new complex has a planned capacity of 85,000 tonnes in the initial phase with 6,000 ha under sugar cane, rising to 10,500 ha under cane with a production capacity of 127,000 tonnes in the eighth year.

Tobacco is cultivated alongside food crops on about 22,000 peasant farms in Sidamo, Shoa, Eritrea and Haraghe and at a 1,100 ha state farm in the Billate river valley. Production has fallen from 11,700 tonnes in 1981 to 2,400 tonnes in 1986, largely because of the substitution of food crops on peasant farms. There are plans to increase the area under tobacco cultivation to 3,000 ha and production to 4,800 tonnes by 1993. If this increase is achieved the state farms will produce 65 per cent of the raw material requirements of the two cigarette factories at Addis Ababa and Asmara, as compared with 27 per cent in the mid-1980s. Domestic tobacco prices are currently higher than those on the world market and so the development of an export market for raw tobacco is unlikely.

A wide range of spices^{31/} are cultivated in Ethiopia many of which have potential as export commodities, though only parika and capsicum are currently exported after processing. Recently, efforts have been made to diversify the range of spices produced on a commercial scale. The Jimma Agricultural Institute has experimented in the cultivation of ginger, Korerima, tumeric, cardamom and cinnamon, the last three of which are exotic species. The results have been encouraging. At present, peasant farmers

31. Spices currently cultivated in Ethiopia include: basil, black cumin, cardomon, cinnamon, cumin, coriander, dill, fennel, fenugreek, garlic, ginger, korarima, long pepper (piper longum), falso pepper (piper nigrum), mustard, onion, rsoemary, thyme and tumeric.

produce about 70 per cent of the inputs used by the spice extraction plant and state farms the remainder. Problems have been experienced with the regularity and quality of supplies. A solution to this problem has been found in the establishment of out-grower contracts with many of the small farmers and the distribution of improved seeds to raise raw material quality. Such practices will assist in the diversification of the raw material base through the introduction of new commercial species.

Livestock

Ethiopia's substantial livestock resources (Table 5.13) creased steadily from 1980 to 1988 (Table 5.8), notwithstanding the impact of severe droughts in 1984-85 and 1987. Livestock exports by weight and value doubled from 1981 to 1986, when livestock exports accounted for 2 per cent of total export earnings. Nevertheless, further expansion of export sales and industries processing livestock products is constrained by low levels of commercialisation and productivity in the livestock sector and problems of marketing and distribution.

Livestock plays an important role in the economy of highland Ethiopia where work oxen - over 20 per cent of the total number of cattle in the highlands - are commonly used as draught animals, sheep and goats are kept for meat or sale and equines are used for transport. About one quarter of the livestock herd is found in lowland regions where it forms the mainstay of a pastoral-nomadic subsistence economy. In both the highlands and lowlands livestock is regarded as an asset, providing security against economic or environmental distress. Stock levels are maintained at high levels and the rate of herd take-off is generally lower than might be expected were animal husbandry fully integrated with commercial sector. Moreover, a large part of the animal products from slaughter are retained in rural areas for domestic use.

Table 5.13: Number of livestock and poultry, 1981 and 1985
(¹000 head)

Animal	1981	1985	Percent change 1981-85
Cattle	20,433.9	22,851.4	11.8
Sheep	7,998.0	10,487.9	31.1
Goats	5,159.5	6,362.6	23.3
Horses	1,328.8	1,208.9	-9.0
Mules	231.7	233.1	.6
Asses	2,278.3	2,135.7	-6.3
Poultry	14,183.7	18,752.8	32.2

Source: CSO, PDR Ethiopia: Facts and Figures, 1987

By international standards productivity is low. Low yielding - in terms of carcass weight and milk production - indigenous species predominate. The area under perennial pastures is limited and under pressure from already high stock levels and the need to extend the area under cultivation. In lowland areas the carrying capacity of pastures is dependent on climatic conditions. Droughts in 1973-74 and 1984-85 caused massive herd losses in the north of the country. Straw and legume haulks are the most common supplementary feeds in highland regions but production of these supplements is also linked closely to climatic conditions.

Intensive animal farming is restricted to the state farms which fatten cattle for market and maintain seventeen dairy units supplying milk for the urban areas. In 1984 there were four cattle feeding stations with an annual finishing capacity of 47,400 beef cattle. Dairy units produced about 8 million litres of milk that same year. Virtually all the output of animal feed processing units run by the Ministry of Agriculture (15,526 tons in 1982 and 22,070 tons in 1986), is supplied to these dairies and cross-breeding farms.

To address the problem of low productivity, the government has embarked on a nation-wide animal health and breed improvement campaign. Vaccination, against rinderpest in particular, is expected to reduce herd losses in the 1990s. However, the breed improvement programme is too small to have an immediate impact on the national herd (in 1984 the improved heifer and sheep production centres had an output of only 650 and 350 animals per year). The government is also trying to upgrade rangelands in lowland areas where nearly one million km sq has been brought under the management of Rangeland Development Units (RDU's). During the TYPP period (1984-1993) the government also plans to increase the number of cattle fattening farms to 12 with an annual capacity of 90,000 head and build twelve new dairies increasing milk production to 63.8 million litres per year. These measures are expected to result in a 5-6 per cent improvement in productivity in the cattle sector (as measured by kg of beef per hectare) from the mid-1980s to 1990 and 15-20 per cent by the year 2000 and slightly higher levels for sheep. At these rates of productivity improvement, however, the growth in meat production is unlikely to keep pace with the growth in domestic demand and higher stock levels will be needed.

Smuggling of livestock and livestock products aggravates shortages. The MOA estimates that 750,000 head of sheep and goats 225,000 head of cattle and 100,000 camels are smuggled into neighbouring countries, particularly Djibouti and Kenya, every year. Similarly, the NSLC estimates that 20-30 per cent of raw skins and 30-40 of raw hides escape the official distribution system. Smuggling is profitable because of the official exchange rate significantly overvalues the Birr against the currencies of neighbouring countries, the Djibouti franc in particular, and

smugglers can make large margins on the return trip by smuggling in consumer goods purchased with the proceeds.

In the leather industry, the quality of local raw materials is also regarded as a problem. The hides of domestically slaughtered animals, purchased by dealers in rural markets, are badly prepared and the careless flaying of hides in state run abattoirs causes defects. Delays in the distribution of raw hides leads to decay and the reduction of grain quality. Efforts should be taken to promote rapid delivery and offer prices related to quality.

Faced with the rapid growth of domestic demand for meat and the need to maintain export sales the government has stepped up the production of intensively farmed poultry. The number of poultry birds increased by 32 per cent between 1981 and 1985 and in 1984 state farms produced 156 tons of poultry meat and 1.5 million dozens of eggs. Output of these commodities is expected to grow faster than any other meat product during the TYPP (1984-1993), to 9,300 tons of meat and 30.5 million dozen eggs in 1994. Producers cooperatives are also being encouraged to develop intensive poultry farms. If these targets are to be achieved the government will have to expand the production of intensive animal feeds.

Fisheries

The fisheries potential of the Ethiopia's Red Sea territorial waters is estimated at over 66,000 tonnes per year of small pelagic species (including white tuna, mullet, grouper, barracuda, shark, gilt-head and shellfish). An additional 26,000 tonnes of freshwater species could be caught from inland waters without endangering stocks. The recorded fish catch, however, averaged only 3,695 tonnes per year in the period 1980-82 rising to about 5,000 tonnes in 1986. Although this statistic does not include the catch of Soviet vessels operating from the Dahlak Islands, it is clear that Ethiopia's fisheries resources are significantly underutilised.

This situation may be explained by the unpopularity of fish in Ethiopia, where per capita fish consumption is only 0.1 kg/year, one of the lowest levels in Africa. Fish is rarely eaten other than during the Lent fast when meat is prohibited to Orthodox Christians. Production is also constrained by artisanal methods - most fishermen use traditional barques - prejudice against fishing as an occupation, a shortage of storage facilities and an inadequate distribution network.

In 1985, a shipyard with annual capacity of 50 fishing boats opened in Assab and the government announced ambitious plans to expand production to 15,000 tonnes per year, primarily for the export market. There is certainly potential for the expansion of exports of high-value shellfish and exotic species. Their foreign exchange earning potential may also warrant the development of

processing facilities. A UNIDO commissioned feasibility study has already presented the case for a small (5 tonne/day) fish processing facility producing 460 tonnes of frozen fish (including lobsters, shrimps and bass-filets for the export market), 460 tonnes of canned fish (anchovies and sardines for the domestic market) and 200 tonnes of fish meal and oil (corresponding to 400 tonnes of fish wastes) per year.

Small-scale fish meal and fish oil processing facilities should also be considered. Fish meal can provide a valuable feed supplement for intensive poultry farming and fish oil has numerous industrial applications. Demand will remain the principal constraint on the expansion of production of low-value species and efforts to increase the fish catch should be coupled with active promotional campaigns.

Forestry

At the turn of the century 40 per cent of Ethiopia was covered by forest. Today canopy forest covers only 2.7 per cent of the land surface. Forests are being cut down at the rate of 100,000 ha per year and will have completely disappeared by the beginning of the twenty first century if the current rate of exploitation is not curtailed. The surviving forest resources comprise 2.3 million ha of closed canopy forest, 20 million ha of open woodland savannah, 2 million ha of open acacia woodlands and 0.5 million ha of bamboo groves. Worst affected by the current rate of deforestation are the accessible forests near urban areas. Today the three south-eastern regions of Kefa, Illubabor and Bale account for half the woody biomass resources in less than one fifth of the land area.

About 90 per cent of the estimated 24 million cu m of wood cut annually is used as fuel wood, providing about 70 per cent of estimated total final energy consumption in 1984. Yet the current level of fuelwood consumption meets less than half the demand from the household sector. Prices are high and scavenging is common - 80,000 people are thought to remove wood illegally from the forests around Addis Ababa.

In order to meet the growing demand for fuelwood and protect the surviving indigenous stands priority has been given to the development of plantations of fast-growing fuelwood species, monocultures of exotic Eucalytus globulis for the most part, with a ten fold increase in the production of fuelwood and charcoal targeted for FY 1994 in the TYPP. This policy has given little attention to the needs of industry. Although production of lumber and poles for construction was to increase from 83,500 cu m in FY1984 to 641,000 cu ma in FY1994, most of the fuelwood species planted in recent years are unsuitable for joinery or carpentry. The wood industry is, consequently, fast depleting the stands of

slower-growing indigenous species, the hardwoods in particular^{32/}. A solution lies in the propagation of diverse stands of trees and the identification of multi-purpose species for plantation in government forestry reserves.

32. Of the 200 indigenous species only ten are commonly used in the wood working industry: *Podocarpus brachior*, *Juniperus procera*, *Abingeria adolffiederici*, *Apodytes dimidiata*, *Cordia abyssinica*, *Croton macrostachys*, *Ekebergia capensis*, *Hagensia abyssinica*, *Olea* spp., *Polyscias fulva*, *Syzgium guineense*, *Albizia* spp.

5.3 Energy resources

The energy sector was allocated 6 per cent of development expenditure under the TYFP (1984-1993), a proportion that was subsequently revised upwards to 12 per cent under the 1986-1989 TYDP. Over 90 per cent of the investment planned under the TYDP is to go towards developments in the electricity sector. Hydroelectric power stations built in the mid-1980s guarantee electricity supplies to the modern sector well into the 1990s and some have argued that the system is now burdened with over-capacity. In the traditional sector, on the other hand, there are acute shortages of energy and the over-exploitation of renewable energy resources threatens an environmental crisis.

A 1984 energy sector survey revealed that 86 per cent of total energy consumed is generated from biomass energy sources (81.1 per cent of this from fuelwood and tree residue, 9.2 per cent from animal dung, 8.2 per cent from agri-residue and 1 per cent from charcoal) virtually all of which is used by households and cottage industries (Table 5.14). Although the total standing stock of woody biomass resources is estimated at 13.8 million Tcal with and, allowing for regeneration, the exploitable annual yield amounts to about 265,000 Tcal - over three times the current level of consumption - the geographical mismatch of forest stands and population has led to acute shortages and over exploitation in the densely populated highland regions. At present the supply of woodfuels meets about half the demand in rural areas and even less in urban areas, where prices rose by an average of 9 per cent per year in the early 1980s. By the year 2005 the demand for woodfuels is expected to be 70 per cent greater than at present. Even if the government succeeds in its plan to plant 3.55 million hectares of fuelwood plantations during the TYPP period (1984-1993), which seems unlikely, the growth of fuelwood supplies will not keep pace with demand and mature stands will be depleted. Under these circumstances, the development of alternative energy sources for the household sector is a matter of urgency.

Table 5.14: Final energy consumption by source and end use sector, 1984
(Thousand Tcal)

Sector	Animals		Electricity		Total	Percent
		Biomass		Petroleum		
Industry	-	7.0	0.3	0.9	8.5	6.1
Transport	3.8	-	-	4.0	7.8	5.6
Agriculture	7.9	-	-	0.3	8.2	5.9
Households	1.5	112.7	0.2	0.3	114.4	82.1
Commerce & government	-	-	0.1	-	0.5	0.4
Total	13.2	119.7	0.6	5.9	139.4	100.0
Per cent	9.5	85.9	0.4	4.2	100.0	

Source: Ethiopian Energy Committee, Co-operation Agreement in the Energy Sector, 1986.

The public sector accounts for 98 per cent of electricity generating capacity in Ethiopia. Electricity is supplied to the central and southern regions through a large Inter-Connected System (ICS), which accounts for 70 per cent of total generating capacity, and forty small Self-Contained Systems (SCS) operating from diesel powered and mini-hydro plants. A smaller ICS and 13 SCS networks supply Eritrea. In 1986, 70 per cent of total electricity generating capacity was provided by hydroelectric stations, with four massive hydrostations (Koka, Awash II, Awash III and Finchaa) providing about 65 per cent of total capacity. However, existing hydrostations utilise less than 3 per cent of the country's 15 to 30 GW hydroelectric generating capacity - the Blue Nile and Omo Rivers alone have a potential of 11 to 13 GW - and the government has ambitious plans for the construction of new hydrostations. The Melka Wakane dam (153MW) on the Shebelli river was inaugurated in 1988 and construction of the Gilgel Gibe (to be inaugurated in 1991 with a planned capacity of 150MW) is underway. In addition, the government plans to divert water from the Amerti river to increase generating capacity at the Finchaa hydrostation. These projects will increase generating capacity to 700MW by 1993, by which time 89 per cent of electricity capacity will in the form of hydroelectric power. Northern Ethiopia will still be dependent on thermal, mostly diesel, generators which are costly to run and in need of rehabilitation. In the long term the government plans to connect the central and Eritrea ICS systems and many of the smaller SCS units, thereby extending access to hydro-generated power from the highlands to lowland regions. This will greatly reduce the country's dependence on imported fuel oil.

Table 5.15: Installed electricity generating capacity and production, 1978 to 1986

	1978	1980	1982	1984	1986		
Installed Capacity (MW)							
Hydroelectric	207	216	200	207	210		
Thermal	75	80	79	82	90		
Total			282	295	279	289	300
Production (Million kWh)							
Hydroelectric	386	488	576	657	828		
Thermal	67	128	156	167	170		
Total	452	615	732	824	999		

Source: CSA, Results of the Survey of Manufacturing and Electricity Industries (1985/86 GC), January 1989.

Over the period 1978 to 1983 electricity consumption increased by an annual rate of 13 per cent, largely as a result of increased consumption by the industrial sector as idle manufacturing capacity was brought into use. Between 1983 and 1986, the rate of growth of electricity consumption slowed to 6.5 per cent per annum, but consumption by industry continued to rise (6.9 per cent) faster than residential use (5.9 per cent), and by 1986 the industrial sector accounted for nearly 60 per cent of electricity sales. Since 1983, the growth of electricity consumption by the industrial sector has largely been a result of the substitution of electric for fuel powered boilers. Electricity consumption by industrial boilers on the central ICS increased by 16 per cent per year from 1980 to 59GWh 1985 and is expected to reach 203 GWh in 1995. This pattern of substitution is reflected in the industrial sector's expenditure on energy: the proportion of total energy expenditure going towards electricity costs rose from 30 per cent in 1984 to 52 per cent in 1988.

Table 5.16: Electricity sold by sector, 1982 and 1986

Sector	1982		1986	
	Mn KWh	Per cent	Mn KWh	Per cent
Domestic	198.3	30.2	249.6	29.4
Commercial	63.1	9.6	85.2	10.1
Streetlighting	10.7	1.6	11.3	1.3
Industrial	383.1	58.3	500.5	59.0
Agricultural	1.3	0.2	0.7	0.1
Others	0.5	0.1	0.4	0.0
Total	656.9	100.0	847.7	100.0

Source: CSA, Results of the Survey of Manufacturing and Electricity Industries (1985/86 GC), January 1989.

Efforts are being made to increase the residential sector's consumption of electricity as a substitute for wood fuels. Per capita electricity consumption was estimated at 18KWh in 1985, one of the lowest levels in Africa, and less than 10 per cent of the population have access to electric power. The government hopes that gradual rural electrification will raise this proportion to about 17 per cent of the population by 1993. Small SCS units are the most economic means of achieving this goal, owing to the dispersal of the rural population and the high cost of transmission extension, though about ten communities are attached to the central ICS each year. At this rate the industrial sector will remain the principal electricity consumer well beyond the end of the TYPP in 1995.

Existing and committed electricity generating facilities will satisfy projected demand at least until 1995. Thereafter, additional hydro-generating capacity is planned (the multistage Aleltu project with a final capacity of 470MW and the Chemoga-Keda scheme) but the government is also investigating the possibility of geothermal power. Potential geothermal station sites are confined to the Rift Valley where several sources of good quality steam have been tapped by recent drilling. According to preliminary investigations, the most promising sites near Langano could generate 120MW from eight wells. A site at Tendaho, near the Eritrean ICS and potash deposits in the Danakil depression, is also under investigation.

Ethiopia is entirely dependent on imported crude oil. This provides the feedstock for the Assab refinery, which meets over 90 percent of domestic petroleum products. Unfortunately, the hydro-skimming technique employed by the refinery (see Section 3.0) produces a relatively large proportion of heavy oil fractions, not all of which can be used in Ethiopia. Surplus production of heavy fractions is exported - generally at low prices. Exports of these heavy fractions averaged 187,300 tonnes from 1981-87, representing 26.9 per cent of the refinery's output. Meanwhile, the balance of light oil fractions has to be imported - an average of 29,600 tonnes per year from 1980 to 1987.

In the years following the oil price rises of the 1970s, dependence on imported crude oil placed a heavy burden on the balance of payments. Oil imports absorbed 18 per cent of export revenues in 1978 to 47 per cent in 1982. Although the cost of oil imports fell by 45 per cent from 1982 to 1988, crude oil and petroleum products still swallows up almost one quarter of Ethiopia's export earnings. In order to reduce this burden, the government has sought to restrict the private use of automobiles and substitute electric boilers for those powered by fuel oil in the industrial sector.

Table 5.17: Imports of Crude Petroleum and Petroleum Products, 1981 to 1988
(Million Birr)

	1982	1984	1985	1986	1987	1988
Crude Petroleum	357.8	313.3	262.9	163.7	183.3	182.2
Petroleum Products	37.5	57.1	26.5	60.2	35.7	33.6
Total	395.3	370.4	289.4	223.9	219.0	215.8
Petroleum as per cent of total imports	24.3	19.3	14.1	9.8	9.9	9.2
Petroleum as per cent of total exports	47.5	42.9	42.0	23.8	29.8	24.3

Source: INF, Financial Statistics, 1989

Oil exploration has been carried out sporadically in the Ogaden since the 1930s. Under the terms of an agreement signed in 1986, Soviet geologists continue exploratory drilling in a 10,000 km sq block in this region. Traces of oil have been found but no commercial oil reserves. The government offered 25 blocks in Eritrea, along the border with Sudan and in the Ogaden to Western oil companies in April 1986. In July 1988 the International Petroleum Corporation signed a oil exploration contract covering the Danakil block (34,000 sq km in southern Eritrea) and British Petroleum signed a similar agreement covering the Dhalak block (32,000 km sq in northern Eritrea) in 1989. Geologists are reasonably optimistic about prospect of discovering commercial oil deposits in both the Ogaden and the Red Sea regions.

In 1987, the government announced the discovery of a natural gas deposit, estimated at 25 billion cu m, in Haraghe, though other deposits have been identified and some sources speculate that the total reserves nation-wide may be as great as 169.9 billion cu m. Although the size of Haraghe deposit makes it commercially attractive, exploitation will demand considerable investment on account of the deposit's remote location. A feasibility study for a small-scale plant - with an estimated cost of \$30 million - is currently under preparation. This study will investigate potential alternative uses such as the production of fertilisers and the use of gas as an industrial and household fuel. Bottled gas is particularly attractive as an efficient substitute for woodfuel.

No coking coal has been discovered in Ethiopia but over twenty seams of lignite, with reserves totalling several million tonnes, have been identified. Most of the seams are discontinuous, with a high clay content and they are generally found under considerable overburden. Consequently, they are considered of minor economic importance. Only one seam, in Nedgo, Wollega, is of potential interest to the industrial sector.

Energy prices have been used as a means of promoting an appropriate energy consumption pattern. Petroleum products are generally priced in relation to their economic costs, though motor oil is priced well above cost price and kerosene and LPG well below. Electricity consumers, on the other hand, have benefited from a hidden subsidy. Tariffs were maintained at 1974 levels in Eritrea and 1978 levels in the central ICS until July 1986. This tariff was inadequate to support the EELPA's operating costs and investment programme, necessitating block grants from the central government budget to support the Authority's budget. In July 1986 tariffs were increased by 75 per cent (see Table A-0) with charges based on a declining block rate which differs for each of the power sources (regional ICS and SCS). The new rates are relatively high by international standards (\$0.103 per kWh) but lower than most African countries. There has been discussion about the adoption of an time-of-day peak and off-peak tariff structure. This would be of

particular interest to large-scale industrial consumers, though these are relatively few in number.

5.4 Hard mineral resources

Manpower and financial constraints have prevented the Ethiopian government undertaking a systematic survey of the country's mineral resources. Geological maps had been prepared for less than 20 per cent of the country by 1988. Moreover, where commercially viable deposits of industrial minerals and rare metals are known to exist transport constraints and shortages of foreign exchange for the purchase of essential equipment have often prevented their development. In 1985 mining accounted for only 0.3 per cent of GDP and 2 per cent of merchandise exports. Under the TYDP (1986-89) the government planned to expand the level of geological exploration - more than tripling the annual exploration budget from Birr4.9 million in 1981-86 to Birr15.6 million in 1986-89 - and undertake investments of Birr177 million in the development of projects. These investments will, the government anticipates, encourage closer linkages between the mining and industrial sectors, such as through the development of a ceramics industry, and create new sources of foreign exchange earnings. The government may also be able to raise capital for mining projects through partnerships with foreign companies, either within the framework of the joint-venture code or through production sharing agreements, such as those signed with oil exploration companies since 1986. Foreign investment would be most likely in the development of those mineral resources with export potential.

Table 5.18: Production of minerals, FY 1983 to FY 1988

Mineral		1983	1985	1986	1987	1988
Gold	kg.	463	916	923	642	728
Platinum	g.	1,682	112	2,400	1,040	1,485
Kaolin	cu. m.	-	575	67	1,867	572
Diatomite	cu. m.	-	187	80	...	12
Gypsum	cu. m.	325	625	300	935	1,276
Limestone	cu. m.	...	...	...	50,267	97,413
Lime	cu. m.	-	4,229	14,853	1,528	1,963
Marble blocks	cu. m.	...	1,800	192	...	...
Marble tiles	sq. m.	...	87,000	7,500	...	...
Building stone	cu. m.	5,964	720,701	567,276	...	723,835
Bricks	'000	...	...	21,582	...	11,623
Salt (edible)	tons	155,824	193,293	198,622	163,117	175,777
Sand	cu. m.	23,317	385,498	355,410	...	617,044
Scoria	cu. m.	11,230	12,281	9,575	...	8,515
Pumice	cu. m.	5,625	8,086	35,481	...	143,442

Source: Data provided by Ministry of Mining and Energy.

Ethiopia's known mineral resources may be summarised, in alphabetical order, as follows:

Bentonite - A soft, highly plastic clay derived from volcanic ash, bentonite is used in drilling, the bonding of foundry moulding sands, filtration and as a body mix in ceramics. Deposits have been identified at Hadar (1.85 million tonnes), Warselso (14 million tonnes), Gewane (154 million tonnes) and Ledi (3.5 million tonnes). While only the Gewane deposit has been tested for its suitability as raw material for the ceramics industry, preliminary studies have revealed that bentonite can be used as a non-metallic sorbent in agriculture and significantly improve crop yields^{33/}. Another possible use of bentonite is the production of bleaching earth, a filter and decolorising agent used in the food and chemical industries. However, the minimum viable plant capacity for this product - 3,000 tons per year - is ten times greater than domestic demand and the penetration of export markets could prove problematic. Nevertheless, EMRC has proposed a 10,000 ton per year capacity dry processing plant for various industrial applications and a detailed feasibility study is planned.

Copper and zinc - In the early 1970s the Ethio-Japan Mining Co. carried out test drilling on a large sulphide copper deposit, which contained small quantities of zinc, silver and gold, at Debarwa in Eritrea. The copper content of ore in the primary mineralisation zone is low (1.5 per cent Cu) and, while the copper content rises to 7-8 per cent in the secondary mineralisation zone at 80-100 m, the deposit is considered sub-marginal at current market conditions. Another sulphide deposit, zinc with some silver and gold, has been identified at Adi Nefas north of Asmara, also in Eritrea. This deposit is considered worthy of further exploration.

Diatomite - Diatomite deposits were discovered at Adami Tulu, Chile Jila and Gademotta in the Rift Valley in 1975-76. Total reserves are estimated at 35.9 million tons of good quality diatomites covered by silt and fluvial gravel. EMRDC proposes to develop a processing plant with a capacity of 10,000 ton per year. A detailed feasibility study is being prepared. Diatomites are used as a filtering agent in brewing, as a filler in the paint and paper industries and as insulating material. Domestic demand is, however, only one tenth of the size of the minimum economic processing plant (6,000 tons). Exploitation would, therefore, depend on the development of an export market. Unfortunately, high freight costs to the port will reduce the competitiveness of the project at current market prices.

33. Lakew Tezera (Ethiopian Mineral Resources Development Corporation), Application of Non-Metallic Sorbents in Agriculture, June 1988.

Feldspar - Feldspars suitable for the production of glass and ceramics have been discovered at Kenticha in Sidamo and are currently under technical and economic evaluation. Reserves, in two veins, are estimated at 527,000 tonnes. The low level of impurities indicates that milled material will not have to be cleaned but hand sorting will be necessary to insure a standard product. In order to meet the demands of the growing ceramics industry a production level of 4,000 tonnes per year is anticipated.

Gold - Production of 3 tonnes per year of gold at Lega Dembi in Sidamo is due to begin in early 1990. The northern part of the gold bearing quartz deposit has been extensively investigated by Seltrust Mining in 1985 and BRGM in 1987 and 30 tonnes of recoverable gold reserves have been proven. Surveys indicate that the remaining two blocks of the Lega Dembi field are also promising with field potential of 230 tons - 67 tons perfectly proven, 62 proven and 101 tons probable. An EIB feasibility study estimated that the mine would generate \$30 million per year in operating revenues.

Alluvial gold deposits are already mined at Adola in Sidamo by the Adola Gold Development Enterprise (AGDE). About 750 kg of gold per year is retrieved by a process of gravity amalgamation and hand panning. A recent study estimated that the recovery rate varies between 55 and 85 per cent, fine grained gold being lost in the tailings. It argues that recovery rates could be improved with the construction of gravity separation equipment at the end of the washing sluice^{34/}. AGDE buys between 115 and 125 kg of the official gold production from small-scale panners and two cooperatives working in the Adola area. Although the cooperatives have access to a washing sluice and gravity separation tank, the work is extremely labour intensive, the gold bearing alluvium being carried to the sluice by wheelbarrow. A large number of part-time miners also prospect illegally at known gold bearing alluvial deposits at Adola and in Wollega. Since ABDE gold purchasing price is well below that offered on the world market (\$60/oz compared with \$450/oz) it is thought that much of the informal production is smuggled out of the country.

Gypsum - Large gypsum deposits associated with evaporites are found in the Danakil depression, while Jurassic gypsum deposits are found in the Blue Nile gorge and the Muger river of central Ethiopia.

Iron ore - An iron ore deposit estimated at 18 million tonnes has been identified in Biklal, Wollega. Although detailed geological surveys have yet to be completed, the reserve is

34. World Bank, Ethiopia: Mineral Sector Review, Report No. 7111-ET, June 1988.

considered large enough to support a small direct reduction plant. However, the ore would have to be concentrated to raise the iron content from 40 per cent to 60 per cent and processed to remove titanium oxide contamination, amounting to 19 per cent by weight, before use. These processes would add considerably to the cost of exploitation.

Kaolin - Proven reserves of 869,100 tonnes of kaolin have been identified in two deposits at Bombawoha in Sidamo. The degree of mica and quartz contamination varies and so the production of standard quality products will require processing. Owing to the low bonding strength of the raw material, production will be restricted to sanitary ware and other coarse porcelains, unless the kaolin content is upgraded from 40 per cent to 70 per cent by magnetic separation, which may prove economically unjustifiable. Nevertheless, the MOI has included a project for the development of the mine at Bombawoha and ceramic production facilities at Awasa, 130 km away, in the 1989-1993 development plan. It is anticipated that the mine will produce 4,000 tonnes of kaolin per year; 2,000 tonnes for ceramics and 2,000 tonnes for an aluminium sulphate plant.

Limestone - Cement factories at Addis Abba, Dire Dawa, Massawa and Mughar have all been built near substantial reserves of limestone. Several other limestone deposits capable of supporting a large scale cement plant have been identified in the south and east of the country.

Marble and other decorative stone - The Ethiopian Marble Industry (EMI), since 1983 part of ECOM, operates four quarries in Gojjam, Wollega and Harar. These quarries and the associated processing facilities are currently working well below capacity. Consequently, new investment will not be needed for some time to come. UNIDO has helped EMI identify six new sites which could provide sources of decorative granites, dolomite, limestone and marble for at least twenty years. Some of these stones are thought to have export potential.

Phosphate - As yet no commercially viable deposits of phosphates - a mineral commonly used in the manufacture of fertilisers - have been discovered. Exploration is currently focused on the Biklal area of central Wollega where an apatite deposit several kilometres in length but of low grade has been identified.

Platinum - Alluvial platinum deposits at Yubdo, Wollega, produced an average of 1,500 grams of platinum per year between FY1983-FY1988, though production has varied considerably from year to year and all but stopped in 1989. Extraction is expensive because the deposit is low grade (0.03 to 0.1 g./cu m) and the platinum fine grained. New investment will be needed if production is to be increased.

Potash - A potash deposit at Dallol in the Danakil depression, 90 km from the Red Sea port of Mersa Fatma, was mined intermittently from 1917 until 1963 when the mine was abandoned due to problems with the water supply. The deposit was acquired by the Ethio-Libyan Joint Mining Company (ELMICO) in 1981 and a technical feasibility study was completed in 1984^{35/} with a view to reopening the mine. This study revealed that potash bearing strata lay close to the surface and considered the upper part, consisting of sylvite with 33 per cent KCl content, worthy of exploitation. Solution mining with concentration of brine in evaporation ponds was identified as the most economic extraction method. However, the economic viability of the mine is doubtful. Ethiopian soils are generally rich in potassium and Urea and DAP are the most commonly used fertilisers, neither of which require potassium. Nor are prospects good for export sales. Demand and prices are currently depressed and likely to remain so in the near future.

Quartz - Five block occurrences of quartz suitable for the production of fine ceramic materials (white and colourless glass, sheet glass and porcelain) have been identified within the feldspar deposits at Kenticha. Quartz may also be recovered as a by-product of the Bombawoha kaolin mine. Total reserves are estimated at 268,000 tons. The MOI plans to develop a mine with a projected capacity of 4,000 tonnes per year to provide raw materials for the planned ceramics manufacturing complex at Awasa.

Salt - Industrial production of edible salt is restricted to the Assab Salt Works. Production capacity was increased from 120,000 tonnes per year to 220,000 tonnes by an expansion project completed in 1985. However, flood damage to the evaporation ponds and connecting dykes in 1986 has kept production well below capacity - 175,777 tons in FY 1988 - and the plant is now in need of rehabilitation. In the 1970's the salt works exported to the Far East and Africa but growing domestic demand has absorbed much of the increase in production and export markets were lost when the existing transport system collapsed. In order to recover export markets, the MOI has proposed a further doubling of production capacity by the construction of 500 ha of evaporation ponds. The expansion project also envisages the construction of a new bulk handling system and export terminal. Approximately half the salt work's production at the expanded level will, the MOI anticipates, be available for export.

Scoria - Large deposits of volcanic scoria found in the region of Debre Zeit are currently used in construction.

Soda Ash - Lake Abijata, like other Rift Valley lakes, has high sodium salt concentrations (Na_2CO_3 0.65 per cent and NaHCO_3

35. PEC Engineering, Dallol Potash Project: Phase 1A Report, April 1984.

0.60 per cent). EMRDC is implementing a project to use these resources, and water pumped from neighbouring Lake Sala, to produce 20,000 tonnes of soda ash per year by solar evaporation. About 7,000 tonnes per year will be sold as crude soda ash (96 per cent Na_2CO_3), for use in local industry, the glass factory in particular; 12,000 tonnes per year of wet soda ash (97 per cent $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$) will be used by a caustic soda plant now under construction; and 1,000 tonnes per year will be refined to 99.5 per cent Na_2CO_3 for sale in export markets. In the long term it is hoped to expand the refinery to produce 200,000 tonnes per year of soda ash for export, generating \$4-5 million in foreign exchange. The financial viability of the project will, however, depend on the plant maintaining low transport costs to the port of Assab 950 km away. A World Bank study has also voiced concern about the environmental impact of the soda ash plant on Lake Abijata, a nature reserve and tourist attraction.

Sulphur - Scattered sulphur deposits are found in the Rift Valley and the Danakil Depression. The largest of these are at Dalos with an estimated reserve of 200,000 tonnes and Dofan, near Awash Station, with a reserve of 2,000 tonnes. An iron sulphide deposit has also been identified in Eritrea. Sulphur is used in the manufacture of fertilisers and a wide range of chemical products.

Tantalite - Proven reserves of 1.6 million tonnes of tantalite with an average grade of 250 g/tonne (inferred reserves of 72,000 tonnes of tantalite) have been found at Kenticha in Sidamo. Trial processing tests on 20 tonnes of tantalite pre-concentrate were undertaken in 1988 and construction of a pilot mine was due to begin later that year, after economic feasibility studies. Tantalum is a hard metal which retains its characteristics through a wide temperature range. It is used primarily by the electronics industry. Given the current stage of industrial development in Ethiopia and the mineral's foreign exchange earning potential - the market price of tantalum in mid-1989 was \$100,000 per tonne - commercial exploitation will be directed at the export market.

5.5 Transport infrastructure

Ethiopia's poor transport infrastructure is a major constraint on regional and national economic development. For want a viable alternative, about 93 per cent of freight is carried by road transport. The length of all weather roads increased from 8,788 km in 1975 to 14,282 km in 1986 (of which 10,225 were asphalted) but in the mid-1980s the road density was still under 15 km per 1,000 sq km. Three quarters of the rural population live more than half a days walk from the nearest all-weather road. Inevitably, this handicaps the mobilisation of agricultural surpluses and isolates rural communities from the national economy. Inadequate maintenance and natural disasters render even major roads unusable periodically (the main road corridor between Assab and Addis Ababa was closed for nearly a month in 1989 following an earthquake).

Table 5.19: Number of vehicles inspected, FY 1981 and FY 1985

Vehicle	1981		1985		1986 Total
	Total	of which old	Total	of which old	
Commercial pickups	3,863	95.8	6,447	93.4	6,933
Heavy commercial trucks	4,440	94.5	6,265	93.1	6,446
Heavy truck trailers	1,638	95.5	1,832	96.3	2,188
Total	9,941	95.2	14,544	93.9	15,567

Source: CSO, Transport and Communications Statistics, Statistical Bulletin 55, 1987; and CSO, PDR Ethiopia Facts and Figures, 1987.

Another major constraint on the transport system is the shortage of reliable trucks and lorries. Although 6,550 lorries and trucks were imported between 1981 and 1986 and the number of freight vehicles inspected by transport authorities - which may not necessarily be the entire fleet - increased from 9,941 in 1981 to 15,567 in 1986 (Table 5.19), over 90 per cent of the total number of vehicles inspected by transport authorities in 1986 were identified as old. The average age of the privately-owned vehicles, which account for 80 per cent of the transport fleet, is now nine years. Shortages of spare parts and tyres exacerbate the problem: almost one quarter of the road transport fleet is thought to be out of service at any time. This causes delays in delivery and increases the wastage of perishable goods.

During drought years, when vehicles are diverted to the distribution of food aid, the shortage of servicable road transport becomes critical. In 1984/85, for instance, the shortage of vehicles caused a reduction in coffee exports since there were not enough vehicles to transport the harvest to Assab.

What is more transport is extremely expensive. The Ethiopian Freight Corporation (EFC), the main carrier for the EDDC and other government distribution agencies, charges customers a rate of Birr0.0247/100kg/km. The expense is compounded by long distances: Addis Ababa is 900 km from Assab, the country's principal port, southern Sidamo is 2000 km distant. While the CSA 1935/86 manufacturing survey indicates that transport charges amount to only 2.2 per cent of the total cost of production, it should be recalled that these costs do not include distribution since EDDC purchases products from the factory gate. When distribution costs are taken into account, transport is thought to account for 10-15 per cent of the retail price. Transport costs represent about 20 per cent of the total price of beer manufactured in Harar and sold in Moyale (Sidamo) or half the cost cement manufactured in Addis Ababa and sold at Moyale. Although regional variations in retail prices do include a component that reflects the cost of distribution the heavy burden of transport costs forces the EDDC to absorb much of the regional price variation within a fairly uniform pricing structure.

High transport costs also handicap exporters. In the mid-1980s, the cost of freight transport by truck from Addis Ababa to Assab was Birr153 (\$74) per ton compared with an average cost of \$50 per ton from Assab to European ports.

Ethiopia's only serviceable railway, linking Addis Ababa and Djibouti, was completed in 1917. It is now in need of a complete overhaul - as indicated by tragic derailments in 1985 and 1987 - which will cost at least \$250 million. The volume of freight transported from Ethiopia to Djibouti has fallen from 353,000 tonnes in 1974-75 to 235,000 tonnes in 1987 as the Ethiopian

government has directed an increasing proportion of its trade through the Ethiopian port of Assab. The road corridor is more reliable, faster and - incredibly - cheaper. The railway now handles only 20 per cent of Ethiopia's import trade, much it food aid, and 7 per cent of Ethiopia's exports. An Addis Abba-Assab rail link has been discussed but is unlikely to go ahead. A pre-feasibility study suggested that the total project cost would be approximately \$1.4 billion. An alternative might be a oil pipeline from the port to the capital: at present all the country's petroleum products are distributed by lorry from the Assab refinery.

In normal circumstances the facilities at Ethiopia's principal port, Assab, which handles approximately 60 per cent of Ethiopia's trade, are strained but during the 1984-85 famine the port became so congested that the government was forced to divert shipments of food aid to Djibouti. The port is now undergoing a major expansion programme to accommodate the increasing flow of traffic. The IDA, ADB and EIB are funding the construction of a 450 m quay, two 12 m deep berths, roll-on-roll-off and container facilities. Two further berths and additional container facilities will be constructed in the third phase of the port expansion project, scheduled to begin in 1992. The port expansion will not, however, equip Assab with bulk handling facilities, which may prove problematic if deposits of potash and soda ash are developed for export. Port facilities are also being upgraded at Massawa, which serves the north of the country. However, the port infrastructure has suffered badly from internal insecurity in the north of the country and may no longer be serviceable.

Air freight transport is used to export perishable items such as chat to Djibouti and vegetables, fruit and flowers to European markets. In 1986 the total weight of freight carried by Ethiopian Airlines amounted to 57,357 tons, of which just over half was in domestic flights. Ethiopian Airlines has recently ordered an air freight Boeing 757 to facilitate increased fruit and vegetable exports.

5.5 The role of technical co-operation in industrial development

Owing to the acute shortage of skilled technical and managerial staff in the industrial sector (see Section 5.1), technical cooperation plays an central role in the process of development. However, both donors and the government have given priority to investment rather than technical assistance. In 1987/88 (the last year for complete records are available), the Ministry of Industry and the Corporations under its supervision received technical assistance valued at Birr2.956 million. This represents 11 per cent of the total foreign financing of industrial investment that year and 23 per cent of total foreign grants.

The bulk of technical assistance has been provided in the form of training. In 1988, 388.9 months of training abroad accounted for 76 per cent of technical assistance expenditure, the remaining 24 per cent financed 42 months of expert assistance. Priority has been given to the acquisition of technical and production skills. In December 1989, 41 of the 48 MOI and Corporation employees training abroad were training in technical subjects.

Most technicians undergoing training abroad are trained in conjunction with investment projects. Since Ethiopia has chosen a capital intensive path of industrialisation which places considerable emphasis on the use of up-to-date technology, new projects generally require specialist skills. Local training facilities for specialists and high grade technical training are extremely limited, particularly in modern engineering skills, and such staff have to be trained abroad.

While the practice of tying technical assistance to investment projects ensures that the operational requirements of individual plants are met it does not address institutional needs a nationwide. Instead of developing manpower across the board it creates pockets of expertise which have little impact at a branch or sectoral level. This is particularly true of Ethiopia where absorption capacities are relatively low, both qualitatively and quantitatively. While the quality of education in social science subjects is high at all levels, science and engineering education is generally weak. Furthermore, the output of diploma and degree level graduates is far below the numbers needed to service existing industrial capacity let alone new developments. As a result the skills base is extremely narrow.

Greater emphasis is now being placed on the expansion of vocational training, particularly at the shop-floor level, while the capacity of educational institutions training professional engineering and technical staff is also to be increased. Technical assistance will have the greatest impact if it is tied to the institutional framework for manpower development which the government and corporations have already established. The National Productivity Centre currently serves as the central training institute for all MOI Corporations. Four of the Corporations also operate training centres for their employees and two new training centres are planned (see Section 5.1). While these institutions should provide the framework for manpower development at the shop-floor level their capacity is extremely limited owing the shortage of training staff and teaching equipment. Technical assistance would be of considerable benefit at this level, particularly in the formulation of training programmes and the upgrading of teaching staff rather than the training of those directly involved in industrial operations. This will contribute to the establishment of a self-sustaining manpower development capacity.

UNDP has been closely involved in technical assistance along these lines through its financing of the National Productivity Centre (since 1978). UNIDO has also provided some assistance to a sectoral training programme through the provision of an industrial training manager (RP/ETH/79/001). However, UNIDO has focused its provision for technical training at the branch or even plant level and technical training has frequently been linked to direct support activities. Its principal contribution in terms of sectoral development has been through institution building. Three projects stand out in this field.

The first is UNIDO's assistance to the Ethiopian Centre for Technology (RP/ETH/82/001 through RP/ETH/84/001) which has sought to strengthen the local capacity for technology development, the assessment of domestic technology capabilities and the identification of appropriate technologies within the Ethiopian context. A related project is UNIDO assistance to the Engineering Design and Tool Centre (RP/ETH/83/024), which aims to assist in the development of fundamental engineering skills. This is closely related to the government's sectoral objective of developing a domestic engineering capacity.

The second is UNIDO's assistance to the Handicrafts and Small-Scale Industries Development Agency (HASIDA) (DP/ETH/77/018 and DP/ETH/83/012). Assistance has been geared to the development of appropriate technologies and the provision of training for small-scale industries and cooperatives. Further assistance along these lines may be warranted in view of the government's recent initiatives in the field of private sector investment promotion.

By far the most important of UNIDO's sectoral development projects, however, has been its assistance to the Development Projects Study Agency (DP/ETH/80/005) and ongoing assistance to Industrial Projects Service (RP/ETH/83/001), now integrated within DPSA. These have contributed to the establishment of a local project identification and appraisal service. In addition to institutional development, UNIDO has provided the IPS with direct support through the preparation of branch level strategy studies and project feasibility studies^{36/}. Numerically, such projects have been the most important in UNIDO's assistance to Ethiopia. As the IPS's institutional capacity improves it is desirable that such direct support activities should be reduced.

A large proportion of UNIDO's past and on going technical assistance projects since 1975 may be classified as direct support activities at a plant or branch level. These projects have frequently been aimed at the resolution of technical or marketing

36. Project XP/ETH/86/001 "Strengthening the inter-sectoral linkage between agriculture and industry" and Project XP/ETH/86/003 "Feasibility study of a baby food manufacturing complex".

difficulties and production bottlenecks^{37/} or providing direct support at the project implementation and start-up phase^{38/}. This reflects the shortage of experienced managerial staff. While UNIDO's assistance to the IPS has strengthened the service's project implementation capability it remains one of its weakest areas. Further technical assistance is needed in this field. Plant management is also weak, particularly when it comes to the identification and resolution of production bottlenecks. This problem is recognised by the MOI which continues to request UNIDO's assistance in the management of plants with financial or technical difficulties.

In the short-term the solution may be to provide management consultancies following the terms of reference provided by the Corporations and the MOI. In the long-term, however, management training should be improved. Clearly, the most appropriate channel for such assistance is the Ethiopian Management Institute (see Section 4.2). This institute now benefits from UNDP funding. Particular areas in which plant level management will require technical assistance include: the computerisation of accounting procedures; preparation of input, sales, inventory, plant, product and personnel indicators; the regular evaluation of performance indicators; preparation of appropriate management action programmes. These measures will become particularly important if the government proceeds with recent moves to give plant level management greater autonomy.

UNIDO has also played a role in promoting technical cooperation between developing countries through Project SI/ETH/802, in which two Indian experts were funded to provide assistance to the small-scale industry sector. It is encouraging to note that cooperation between India and Ethiopia has strengthened in this field. In December 1989, the Indian Government funded the thirty small-scale industrial projects which form the core of an Ethiopian government initiative in the field of small-scale industry development. India has assumed a major role in Ethiopia's technical assistance programme, providing 57.2 man months of training (nearly 15 per cent of the total) valued at Birr321,000. Further cooperation along these lines is to be encouraged.

Technical assistance will continue to play a major role in Ethiopia's industrialisation process for foreseeable future. If the benefits of this type of cooperation are to be reaped, coordination and planning are essential. This will require a move

37. For instance, SI/ETH/78/002 "Assistance to the Cement Industry" and SI/ETH/88/804 "Assistance to the Ambo Mineral Water Project".

38. For instance, Project SI/ETH/ETH/82/802 "Assistance in the start-up and initial operation of the Debre Zeit Maize Mills".

away from ad hoc training and consultancy programmes linked to investment projects towards an integrated programme of institutional development. Key areas should be identified at a sectoral and branch level rather than on a plant by plant basis and linkages between skilled staff within the country developed so that the industrial sector can call upon a core of experts to resolve technical and managerial difficulties. An inventory of skills is an essential tool to achieve this end. At the same time experts should be encouraged to pass-on their skills to a new generation of industrial managers and technicians. This can best be achieved by the concentration of resources in "centres of excellence". Such core institutions already exist in the Ethiopian Management Institute and Industrial Project Service. As Ethiopia moves into the 1990's these institutions will play a central role in the country's industrial development.

ANNEXE A
STATISTICAL TABLES

Coffee	524.3	495.9	590.4	466.3	664.8	524.3	64
Oil seeds	28.4	15.3	27.9	15.6	7.7	9.8	;
Oil cakes	8.8	8.2	16.1	1.0	2.0	1.9	
.8							
Pulses	23.7	28.8	20.3	16.9	12.6	8.5	;
Fruit & vegetables	3.6	3.4	4.2	6.0	5.1	12.8	
.7							
Sugar	9.8	10.4	10.1	9.3	10.4	12.6	;
Cotton	28.2	17.8	15.0	1.8	.4	1.7	;
Chat	22.3	37.2	29.0	15.9	8.5	28.7	;
Live animals	9.8	16.3	14.8	19.2	18.9	15.6	;
Meat products	6.3	10.2	5.9	3.9	3.9	5.4	
.7							
Hides & skins	92.7	77.3	93.8	95.4	119.5	108.3	1;
Bees wax	3.6	2.3	4.6	3.4	12.7	.9	
.5							
Petroleum products	76.1	68.8	73.9	66.0	44.2	27.9	;
Other	41.7	35.2	37.3	25.7	12.1	36.4	
Total	851.1	809.5	928.4	744.6	923.3	794.8	100

Source: National Bank of Ethiopia, Quarterly Bulletin, various issues.
 Table A-3: Volume of exports by major commodity group, 1981 to 1987
 (Metric tonnes)

Commodity	1981	1983	1985	1986	1987	Percentage change 1981-1987
Coffee	88,405	87,604	73,834	72,404	80,216	-9%
Oilseeds	16,428	11,546	12,466	5,437	8,219	-50%
Oil cakes	21,213	29,209	3,690	10,420	6,445	-69%
Pulses	24,516	36,244	19,953	11,412	9,897	-59%
Fruit & vegetables	5,112	6,400	9,881	9,036	8,462	64%
Sugar	29,140	56,500	43,070	25,500	33,000	13%
Chat	2,224	3,341	1,380	712	2,931	32%
Livestock	3,547	5,331	6,635	7,353	5,012	42%
Meat Products	2,288	3,106	953	883	1,458	-36%
Hides & skins	8,897	7,738	10,149	13,137	10,246	15%
Bees wax	366	300	477	180	108	-70%
Petrol products	203,790	216,921	194,184	182,903	192,340	-5%

Source: National Bank of Ethiopia, Quarterly Bulletin, various issues

Table A-4: Export unit value index, FY1980 to FY1987
 (1975 = 100)

Commodity	1980	1981	1982	1983	1984	1985	1986	1987
Coffee	298	209	234	213	237	241	375	214
Live animals	169	206	189	196	176	170	194	126
Hides & skins	242	192	161	188	197	178	184	260
Oilseeds	147	167	149	151	86	130	91	101
Petroleum products	195	214	186	195	219	179	81	108

General index	204	186	195	190	195	195	260	189
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Source: National Bank of Ethiopia, Quarterly Bulletins, various issues

Table A-5: Balance of payments, FY1981 to FY1986
(Million US\$)

	1981	1982	1983	1984	1985	1986
Exports	374.1	402.8	402.6	416.8	332.9	477.1
Imports	629.8	675.2	740.0	798.4	840.5	932.1
Trade balance	-255.7	-272.4	-337.4	-381.6	-507.6	-455.0
Net services	-62.8	-63.3	-83.3	-79.8	3.0	-55.1
Net private transfers	23.7	38.1	92.1	144.9	212.9	69.1
Net official transfers	44.8	102.4	158.1	186.1	397.7	113.1
Current account	-250.0	-195.2	-170.4	-130.4	105.9	-327.0
Direct investment	-	-	-	-	-	-
Other long-term capital	242.4	69.5	207.4	194.6	175.2	240.1
Short term capital	123.3	39.5	-35.9	29.6	49.8	-1.1
Capital account	365.7	109.0	171.5	224.2	225.0	239.0
Errors and omissions	-7.6	10.8	-54.8	-150.6	-168.7	201.1
Counterpart items	23.2	1.0	9.4	5.6	-11.6	-9.1
Change in reserves	-131.6	74.4	44.2	50.1	-150.6	-104.1

Source: IMF, Financial Statistics, various issues to January 1990.

Table A-6: Public external debt, 1982 to 1988
(Million US\$)

	1982	1983	1984	1985	1986	1987	1988
Long term debt:							
Total, including							
undisbursed	1,399	1,835	2,243	2,767	3,105	3,932	4,152
Disbursed only	1,010	1,190	1,359	1,721	2,048	2,535	2,790
of which:							
official creditors	909	1,082	1,149	1,440	1,734	2,125	2,328
- multilateral	413	462	503	602	689	863	941
- bilateral	495	620	646	839	1,045	1,262	1,387
private creditors	101	109	210	280	313	410	461
- suppliers	70	84	96	175	223	260	266
- financial market	31	25	114	105	90	150	195
Short-term debt	68	63	67	77	83	98	133
Use of IMF credit	161	134	98	71	84	76	55
Interest arrears	1	1	0	0	0	4	1
Total debt stocks	1,239	1,387	1,524	1,869	2,215	2,708	2,978
Debt flows:							
Disbursements	139	245	252	359	391	447	503
Debt service	74	103	124	149	202	211	267
Net transfers	65	142	128	210	189	236	236
Debt service ratio	13.7	17.8	19.8	26.7	29.7	33.1	39.2
Disbursed debt/GNP	28.0	28.7	31.9	39.4	42.6	50.4	54.0
Per cent of							
disbursed debt:							
short-term debt	5.5	4.5	4.4	4.1	3.8	3.6	4.5
concessional loans	67.7	73.2	71.0	71.9	72.7	73.9	74.8
grant element	46.7	50.9	44.3	39.5	56.4	38.8	51.8

Source: World Bank, World Debt Table, 1989-90

Table A-7: Women in the industrial workforce, FY1986

	Female workers	Percent of total workforce	Percent employed in:		Average wage	
			office	production	Total	Female
Food	3,379	18.5	36.8	63.2	216	135
Beverages	1,647	19.9	35.2	64.8	264	174
Tobacco	350	34.4	26.9	73.1	121	110
Textiles	17,113	47.8	8.9	91.1	194	135
Leather & shoes	1,504	26.1	27.1	72.9	196	155
Wood & products	300	11.6	34.3	65.7	399	185
Paper & printing	1,323	29.8	24.1	75.9	256	195
Chemicals	1,827	25.9	30.3	69.7	395	185
Non-metallic	471	10.4	48.2	51.8	247	185
Metal products	368	11.5	63.6	36.4	370	255
Total	28,282	31.1	18.7	81.3	224	145

Source: CSA, Results of the Survey of Manufacturing Industries,
January 1989.

Table A-22: Ministry of Industry demand and supply of graduate students by certificate and 1985-1989

Subject	Requested	Supply	Deficit Surplus
Accounting	344	138	-206
Banking	9	8	-1
Secretarial	203	40	-163
Supplies administration	85	31	-54
Library science	5	2	-3
Architecture	15	2	-13
Agro-mechanic	16	4	-12
Industrial chemistry	128	80	-48
Electrical technology	212	61	-151
Textile technology	277	122	-155
Metal technology	167	56	-111
Wood technology	16	14	-2
Home economics	1	1	0
Agro-engineering	1		-1
Plant science	6	2	-4
General agriculture	5	9	4
Animal science		1	1
Total diploma graduates	1,491	571	-920
Civil engineering	45	13	-32
Electrical engineering	101	16	-85
Mechanical engineering	298	59	-239
Agro-engineering	4	2	-2
Architecture	1		-1
Chemistry	60	87	27
Geology	4	3	-1
Physics	1	1	0
Biology	2	11	9
Plant science	17	15	-2
Animal science	1	1	0
Accounting	294	69	-225
Statistics	58	20	-38
Economics	54	37	-17
Agro-economics	5	1	-4
Law	21	37	16
Management	115	61	-54
Public administration	8	6	-2
Sociology	1	1	0
Foreign language, Political science, and Psychology	5	6	1

Total degree graduates 1,095 447 -648

Table A-8: Corporation net sales, selected years
(Million Birr)

	Corporation 1988	Corporation 1989	1978	1982	1984	1986	1988	1989
Eth. Food	81.6	190.1	243.3	254.9	236.0	238.2	261.9	261.9
Eth. Sugar	49.4	109.6	154.3	131.8	142.9	134.1	146.9	146.9
Eth. Beverage	133.0	282.9	330.7	391.7	421.4	472.3	489.0	489.0
Nat. Tobacco	61.2	122.5	144.0	155.1	183.3	177.6	166.9	166.9
Nat. Textiles	193.9	344.0	359.2	384.7	434.2	459.5	408.9	408.9
Nat. Leather	55.7	131.7	156.5	177.3	219.9	251.4	263.9	263.9
Eth. Printing	19.5	39.6	49.4	57.6	63.1	62.9	65.9	65.9
Nat. Chemical	21.0	85.4	111.5	84.8	108.5	102.2	93.9	93.9
Eth. Cement	15.5	31.6	31.3	16.1	59.6	69.2	71.9	71.9
Nat. Metalwork	49.6	113.6	145.2	194.2	149.3	130.1	122.9	122.9
Share companie	40.4	65.9	45.9	78.0	45.0	44.2	40.9	40.9
MOI Total	680.5	1,451.1	1,725.3	1,848.1	2,018.2	2,097.6	2,088.9	2,088.9

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-9: Profit margins^{a/} by Corporation, selected years
(Per cent)

Corporation	1978	1982	1984	1986	1987	1988	1989
Eth. Food	2	9	7	12	9	4	4
Eth. Sugar	11	17	16	13	10	8	13
Eth. Beverage	16	5	9	8	5	3	2
Nat. Tobacco	21	21	14	15	17	20	14
Nat. Textiles	2	7	4	4	3	0	7
Nat. Leather	-2	0	6	5	11	15	9
Eth. Printing	18	26	31	31	32	28	22
Nat. Chemical	5	16	19	15	20	18	6
Eth. Cement	-17	-20	-13	-18	-3	3	3
Nat. Metalworks	16	14	20	9	10	12	3
Share companies	9	4	16	24	18	20	3
MOI Total	7	9	10	9	9	7	4

a/ Net operating income/sales income.

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-10: Accounts receivables as per cent of total assets by corporation, selected years
(Per cent)

	1978	1982	1984	1986	1987	1988	1989
Eth. Food	34	41	41	38	39	35	41
Eth. Sugar	10	27	23	25	27	28	24
Eth. Beverage	15	19	17	21	22	22	25
Nat. Tobacco	6	4	4	7	26	22	21
Nat. Textiles	20	21	25	17	18	20	23
Nat. Leather	11	24	29	26	27	36	36
Eth. Printing	23	36	29	23	23	28	25
Nat. Chemical	19	23	19	23	25	26	26
Eth. Cement	10	32	33	36	9	20	22
Nat. Metalworks	28	21	19	26	30	23	30
Share companies	9	10	13	14	14	13	17
MOI average	18	25	24	23	24	25	27
Total Million Birr	159.1	383.6	407.8	482.1	558.4	587.4	644.8

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-11: Inventory as percent of sales revenue by Corporation, selected years

Corporation	1978	1982	1984	1986	1987	1988	1989
Eth. Food	21.2	24.3	15.4	20.2	22.5	21.1	20.0
Eth. Sugar	83.1	97.2	67.1	90.3	74.9	83.2	75.0
Eth. Beverage	22.1	30.2	29.8	30.0	28.4	28.5	25.0
Nat. Tobacco	37.7	45.7	43.8	46.5	30.8	33.1	43.0
Nat. Textiles	68.6	46.6	43.4	48.6	51.5	46.8	47.0
Nat. Leather	79.1	51.0	46.8	45.7	39.3	31.7	35.0
Eth. Printing	54.5	41.1	48.0	41.2	45.1	46.9	48.0
Nat. Chemical	59.7	41.5	45.9	49.7	40.3	48.3	49.0
Eth. Cement	80.1	43.3	49.1	71.4	49.6	44.7	45.0
Nat. Metalwork	71.1	59.9	69.8	54.1	82.6	110.9	106.0
Share companies	34.7	38.8	51.6	32.9	65.2	68.7	64.0

MOI	52.7	45.2	41.9	44.1	43.3	43.1	42.7
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Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-12: Return on net fixed assets by Corporation, selected year
(Per cent)

	Corporation 1988	Corporation 1989	1978	1982	1984	1986	1988
Eth. Food	8	51	57	52	33	12	12
Eth. Sugar	7	18	22	17	17	14	28
Eth. Beverage	77	26	30	33	23	16	12
Nat. Tobacco	121	197	171	182	257	228	130
Nat. Textiles	05	26	16	06	06	-01	-14
Nat. Leather	-03	01	39	31	89	132	89
Eth. Printing	81	172	190	192	211	189	140
Nat. Chemical	19	112	147	88	146	127	42
Eth. Cement	-30	-75	-53	-79	-01	02	02
Nat. Metalwork	95	151	180	69	61	54	12
Share companies	24	31	89	230	109	83	10
Ministry of In	19	35	41	28	25	23	12

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-13: Return on net worth by Corporation, selected years
(Per cent)

	Corporation 1988	Corporation 1989	1978	1982	1984	1986	1988
Eth. Food	5	41	43	42	30	14	14
Eth. Sugar	4	13	16	11	9	7	10
Eth. Beverage	46	30	42	38	26	17	9
Nat. Tobacco	33	58	43	50	64	71	45
Nat. Textiles	2	21	12	9	9	-1	-27
Nat. Leather	-6	-4	-543	243	568	182	69
Eth. Printing	35	91	116	128	132	111	89
Nat. Chemical	8	71	122	67	119	96	32
Eth. Cement	-17	-785	69	92	-2	2	02
Nat. Metalwork	36	57	77	42	38	45	12

Share companies	16	11	22	44	17	16	0:
<hr/>							
MOI Total	10	28	35	27	25	22	1:
<hr/>							

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-14: Transfers from Corporations in the form of capital charge and corporate tax as per cent of net income before tax, select years

(Per cent)

Corporations	1978	1982	1984	1986	1987	1988	1989
Eth. Food	49	61	59	47	56	86	100
Eth. Sugar	39	66	63	69	79	76	65
Eth. Beverage	47	64	57	55	67	74	80
Nat. Tobacco	48	54	58	23	8	52	56
Nat. Textiles	90	70	95	91	122	426	-66
Nat. Leather	-820	368	2965	88	61	55	85
Eth. Printing	58	53	55	52	53	51	53
Nat. Chemical	43	8	4	6	4	5	12
Eth. Cement	-80	-24	-29	-7	-9	120	116
Nat. Metalworks	42	50	52	54	63	63	118
Share companies	36	61	54	51	56	50	60
MOI Total	61	64	59	55	55	67	99
Total transfer Million Birr	58.3	150.1	193.8	189.2	202.2	179.5	105.9

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

**Table A-15: Net-income after tax by Corporation, selected years
(Million Birr)**

Corporation	1978	1982	1984	1986	1987	1988	1989
Eth. Food	1.0	6.9	7.8	17.0	10.4	1.5	.0
Eth. Sugar	3.4	8.8	11.8	7.5	4.7	4.6	9.7
Eth. Beverage	12.0	6.1	14.6	15.8	8.4	4.7	2.4
Nat. Tobacco	7.7	12.6	9.2	20.2	31.5	18.4	11.5
Nat. Textiles	.5	9.3	.9	1.8	-4.4	-13.8	-31.3
Nat. Leather	-3.2	-3.5	3.0	1.2	9.8	18.0	3.8
Eth. Printing	1.7	5.2	7.1	8.9	9.8	9.4	7.2
Nat. Chemical	1.1	13.3	20.9	12.8	22.2	18.1	5.9
Eth. Cement	-2.7	-6.7	-4.1	-2.9	-2.0	-.5	-.4
Nat. Metalworks	4.8	8.4	14.6	8.9	6.3	6.2	-.8
Share companies	2.4	1.1	3.3	9.0	3.6	4.3	.4
MOI Total	22.5	54.1	78.8	84.6	90.0	59.5	.9

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-16: Long-term debt equity ratio by Corporation, selected years
(Per cent)

	1978	1982	1984	1986	1987	1988	1989
Eth. Food	18	24	22	26	44	51	46
Eth. Sugar	4	19	12	2	0	0	0
Eth. Beverage	44	74	73	73	72	73	68
Nat. Tobacco	0	0	0	0	0	0	0
Nat. Textiles	13	33	26	71	76	85	140
Nat. Leather	175	-373	-1489	780	635	126	73
Eth. Printing	11	13	18	21	17	15	17
Nat. Chemical	9	11	17	16	16	18	16
Eth. Cement	5	427	-33	-23	63	50	38
Nat. Metalworks	27	28	45	116	170	195	223
Share companies	50	15	2	0	0	0	15
MOI Total	16	30	30	44	50	49	46

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-17: Short-term loans as per cent of total liabilities by Corporation, selected years

	1978	1982	1984	1986	1987	1988	1989
Eth. Food	5	3	2	5	3	5	6
Eth. Sugar	3	1	4	6	3	1	0
Eth. Beverage	5	12	9	9	9	9	8
Nat. Tobacco	0	0	0	0	0	0	1
Nat. Textiles	17	10	13	10	11	12	11
Nat. Leather	25	37	34	28	23	19	19
Eth. Printing	13	7	14	7	10	9	10
Nat. Chemical	5	4	8	8	7	12	13
Eth. Cement	6	6	12	11	2	2	2
Nat. Metalworks	3	6	2	6	6	7	11
Share companies	5	18	13	4	2	2	5
MOI Total	10	8	9	9	7	8	8
Total Million Birr	87.5	128.2	156.3	186.8	173.7	183.9	188.1

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-18: Current ratio^{a/} by Corporation, selected years
(Per cent)

	1978	1982	1984	1986	1987	1988	1989
Eth. Food	135	108	111	114	118	108	107
Eth. Sugar	445	138	127	127	139	151	219
Eth. Beverage	168	100	100	111	109	116	122
Nat. Tobacco	274	179	166	152	151	145	143
Nat. Textiles	178	132	123	111	109	108	107
Nat. Leather	148	95	100	102	103	114	128
Eth. Printing	158	124	119	120	119	123	123
Nat. Chemical	190	115	105	108	106	108	108
Eth. Cement	145	83	69	78	126	121	159
Nat. Metalworks	140	131	131	158	168	148	136
Share companies	303	226	225	334	373	464	465
MOI Total	179	120	116	118	122	121	128

a/ Current assets:current liabilities.

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-19: Debt equity ratio by Corporation, selected years

Corporation	1978	1982	1984	1986	1987	1988	1989
Eth. Food	140	415	348	246	259	295	331
Eth. Sugar	18	122	116	113	92	84	41
Eth. Beverage	79	287	268	266	260	269	211
Nat. Tobacco	41	88	105	137	143	145	140
Nat. Textiles	96	195	219	232	274	310	441
Nat. Leather	383	-1788	-8193	4368	3812	756	420
Eth. Printing	128	263	305	288	282	251	241
Nat. Chemical	84	293	427	335	367	386	391
Eth. Cement	91	4616	-748	-1023	115	114	80
Nat. Metalwork	226	297	347	372	466	609	801
Share companies	90	78	65	35	30	21	31
MOI Total	87	242	256	246	232	240	221

Source: Based on profit and loss accounts and balance sheets of MOI supervised Corporations.

Table A-20: Inputs purchased with foreign exchange as a percentage of inputs consumed by category and by Corporation, FY1985 to FY1989 average (Percent)

Corporation	Direct materials	Indirect materials	Spare parts	Total inputs
Ethiopian Food	1.9	11.8	38.9	3.2
Ethiopian Sugar	3.0	34.6	88.6	26.4
Ethiopian Beverage	19.3	13.7	83.3	21.1
Nat. Tobacco & Matches	25.2	53.2	101.9	35.0
National Textiles	20.8	14.2	106.5	25.4
Nat. Leather & Shoes	19.1	1.4	83.1	19.9
Ethiopian Printing	41.5	5.4	88.0	42.8
National Chemical	59.6	6.2	87.8	49.9
Ethiopian Cement	-	63.1	63.5	60.7
National Metalwork	70.3	60.1	211.3	71.4
Share Companies	64.6	16.8	205.1	68.7
Total	27.8	26.8	100.4	30.4

Source: Data provided by the MOI.

Table A-20: Structure of handicrafts activities, 1985/86

	Estab- lishments	<u>Percentage share</u>		MVA ^{a/}	Ratio	Ratio
		Fixed Assets ^{a/}	GVP ^{a/}		GVP to MVA	MVA to assets
Basketry	4	.1	2.2	.8	.36	8.2
Carpets	44	.1	31.3	20.9	.67	151.3
Embroidery	107	1.7	149.8	100.0	.67	59.6
Gold & silver	231	354.0	922.3	432.1	.47	1.2
Horn Products	12	.2	24.3	19.5	.80	78.2
Knitting	224	409.7	916.8	331.3	.36	.8
Leather works	145	3.5	364.4	121.5	.33	35.1
Mattress	3	-	26.9	2.4	.09	...
Metal works	372	95.3	1,093.7	504.8	.46	5.3
Non-metal works	16	.6	20.5	6.9	.34	12.3
Pottery	579	14.6	585.9	353.7	.60	24.3
Shoes	68	37.6	290.3	163.4	.56	4.3
Tailoring	7,196	7,307.8	16,657.6	10,906.9	.65	1.5
Weaving	6,240	358.0	16,696.5	7,896.4	.47	22.1
Woodworks	177	112.2	818.8	434.9	.53	3.9
Others	20	11.0	139.3	8.2	.06	.7
Total	15,438	8,696	38,741	21,302	.55	2.4

a/ Total in Birr.

Source: Unpublished HASIDA survey of handicraft establishments (1985/86)

Table A-21: Membership and capital of service and producers' cooperatives, 1987

member Trade	Service Cooperatives			Producer Cooperatives		
	No.	Members	Capital per member (Birr)	No.	Members	Capital (Birr)
Pottery	8	352	218	...	...	...
Basketry	1	6	67	...	...	...
Leather work	3	50	702	1	17	2,5
Horn work	4	56	183	...	...	...
Gold & silver smith	1	20	1,636	2	22	2,4
Embroidery	4	137	2,429	...	...	...
Knitting	16	3,094	815	...	...	...
Carpets	7	371	1,217	...	...	...
Weaving	300	18,299	708	5	247	2,4
Tailoring	361	9,340	2,565	84	3,906	4,5
Total Handicrafts	705	31,725	1,273	92	4,192	4,5
Shoes	5	107	617	...	...	...
Bag and canvas work	1	47	1,340	...	...	...
Mattress work	1	11	797	...	...	...
Candy work	...	...	...	2	36	2,5
Packed food	1	10	500	...	...	...
Woodwork	14	224	3,789	8	190	12,0
Metalwork	13	234	3,324	3	118	7,5
Garage & technical	6	131	1,660	1	21	4,8
Total New Trades	41	764	2,600	14	365	9,5
Total	746	32,489	1,304	106	4,557	4,5

Source: Wolde Tsadik Selameb, Co-operatives: instruments of small-scale industries development in developing countries. The case of Ethiopia. UNIDO (IPCT.61 (Spec.)). May 1988.

Table A-23: Number of Graduates from Technical and Vocational Schools, 1987 to 1990

Course	1987	1988	1989	1990	Total	Perce
Auto-mechanics	253	371	216	225	1,065	14
Drafting	43	35	34	36	148	2
Electricity	218	361	254	204	1,037	14
Electronics	67	75	91	81	314	4
General Mechanics	272	319	142	161	894	12
Machine Technology	44	47	41	41	173	2
Wood Technology	119	101	116	125	461	6
Textile Science	39	65	34	20	158	2
Electric & gas welding	23	23	24	20	90	1
Re-inforcement Assembly	25	21	26	20	92	1
Accounting	250	382	64	80	776	10
Secretarial Science	241	276	40	77	634	8
Building technology	81	60	62	84	287	4
Surveying	34	43	38	36	151	2
Bricklaying, pastering, painting	22	16	25	20	83	1
Construction, joinery, carpentry	20	16	16	20	72	1
Fitting & Plumbing	27	22	25	20	94	1
Food & Nutrition	45	71	35	38	189	2
Domestic Science	47	66	44	36	193	2
Agro-Mechanics	34	55	86	77	252	3
Tractor Operator	22	33	21	39	115	1
Total	1,926	2,458	1,434	1,460	7,278	100

Source: Data provided by Ministry of Education.

Table A-24: Planned development and services provided Ethiopian Management Institute, 1987 to 1991

Service	1987	1991	1987-91
Internal Staff			
Supervision & management trainers	15	25	110
GTT Transmitters	20	0	190
In-house consultants	5	25	80
Chiefs of Management development units	5	20	70
Managers trained directly by EMI			
Senior Managers	56	72	320
Middle Managers	168	216	960
- General Management	20	20	100
- Finance, accounting & cost control	10	12	54
- Marketing & distribution	10	10	50
- Maintenance	70	110	440
- Quality control	15	15	75
- Utilisation of equipment	15	15	75
- Human resources	15	19	83
- Material management	13	15	73
Supervisors	336	432	1,920
Management & supervisors trained by GTTs			
Management & supervisors trained by GTTs	300	850	2,300
Man-months of consultancy	17	70	215

Source: Data supplied by Ethiopian Management Institute

Table A-25: Electricity tariffs in Ethiopia (as of July 1986)

Consumer/rate	Central ICS	Central SCS	Eritrea ICS	Eritr s
Domestic (Birr/kWh)				
First 25 kWh/month	0.11	0.15		
26 kWh to 100 kWh	0.17	0.18		
Remainder	0.12	0.13		
Lighting			0.24	0.
Power				
First 500 kWh/month			0.19	0.
Remainder			0.15	
Massawa			0.17	
Commercial (Birr/kWh)				
First 50 kWh/month	0.15	0.19	as	
51 to 300 kWh/month	0.18	0.22	domestic	domest:
Remainder	0.13	0.18		
Street lighting (Birr/kWh)				
All consumption	0.11	0.15		0.
Small Industrial Consumers (Birr/kWh)				
First 1,000 kWh/month	0.20	0.24		0.
1,001 to 3,000 kWh/month	0.15	0.19		
Remainder	0.10	0.14		
Low Voltage Industrial Consumers				
Maximum demand charge (Birr/kWh/month)				
First 50 kW	12.00	10.00	10.00	
51 to 250 kW	10.00			
Remainder	8.00	8.00		
Energy charge (Birr/month)				
First 200 kWh/kW	0.09			
201 to 400 kWh/kW	0.08			
Remainder	0.07			
First 10,000 kWh/month		0.13	0.09	
10,001 to 20,000 kWh/month		0.12		
Remainder		0.11	0.06	
High Voltage Large Industrial Consumers				
Maximum demand charge (Birr/kWh/month)				
First 200 kW	10.00			
201 to 400 kW	8.00			
Remainder	6.00			
Energy charge (Birr/month)				
First 200 kWh/kW	0.075			
201 to 400 kWh/kW	0.06			
Remainder	0.05			

Source: Data supplied by Industrial Project Service (DEPS)

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