

WORKING PAPER 26

INDUSTRIALISATION IN SUB-SAHARAN

AFRICA

COUNTRY CASE STUDY -- ZAMBIA

by

IGOR KARMILOFF



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Preface

Since early 1987, the Overseas Development Institute has been engaged on a major piece of research under the general title: 'Industrialisation in sub-Saharan Africa', involving in-depth case studies of seven African countries: Botswana, Cameroon, Cote d'Ivoire, Kenya, Nigeria, Zambia and Zimbabwe. The case study work falls into two distinct parts. First an analysis of the industrialisation process from the early 1960s to the mid-1990s, followed by discussion of the options for and possibilities of accelerated industrialisation in the late 1980s and 1990s.

This Working Paper presents the first phase of the research for Zambia. Working Papers 24 and 25 present the first phase of the research for Cameroon and Zimbabwe. It is also anticipated that the research work on Nigeria will be produced as an ODI Working Paper. The first phase analysis for Kenya and Botswana are being reproduced as Discussion Papers of the Institute of Development Studies at the University of Sussex from where they can be obtained.

It is anticipated that the completed country studies incorporating both phases of the research work will be published together as a book towards the end of 1989.

Any further information on these Working Papers or the overall research project should be addressed to Mr Roger Riddell at the ODI.

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1. INTRODUCTION

The post-Independence economic development of Zambia and the contribution made by manufacturing provide an example of both marked similarities and differences with other African countries which became sovereign states in the early 1960s. There would appear to be five cogent reasons for considering in some detail the Zambian case.

First and of most immediate contemporary interest, is the abrupt reversal of economic policy that was initiated in May 1987 after four years of progressive liberalisation of an economy that, since Independence in 1964, had been administered in the pursuit of the political goal of socialism with humanism. Under close supervision by the IMF and with substantial technical help from the World Bank, price controls and quantitative restrictions on imports were abolished, subsidies removed from all but one staple product, interest rates raised to yield positive real returns on savings, public sector employment compressed and, after several devaluations, the national currency (kwacha) left to float against the US dollar with its rate set through weekly auctions.

The very sharp devaluation of the kwacha produced by the float had given rise to a two-week suspension of auctions early in 1987 which was hesitantly agreed to by the IMF. It patently signalled the unpalatable nature of the prescribed medicine for a debt-ridden economy with a dwindling import capacity. But the Fund's conditionality remained unaltered, thereby setting the scene for President Kaunda's May Day announcement reinstating former controls and administered foreign exchange allocations. The Fund's Lusaka office was closed overnight and the Bank's technical staff drastically curtailed.

Yet no more than a month elapsed before the Fund's Area Chief, speaking at a high-level OAU/ECA meeting in Abuja (Nigeria), voiced a muted mea culpa for the Fund's perseverance in its belief that Zambia's difficulties would ease from an expected upturn in the price of its major export --copper--thus allowing the continuation of liberalisation with no sacrifice of welfare.

The second major reason for analysing the Zambian case is the stark illustration it provides of the acute hardships faced by a developing mono-product economy in adjusting to a hostile external environment. Well over 90% of Zambia's foreign exchange earnings have come from sales of copper and some lead and zinc. Production bottlenecks in Zambia, weak world prices and demand for non-ferrous metals--largely the result of the irreversible substitution of man-made products-- the absence of foreign investment, diminishing aid flows in real terms, expensive commercial loans, combined to aggravate the country's external sector constraint.

Third is the model way in which the Fund's and the Bank's precepts concerning management practices, cost accounting, cross-borrowing among parastatals, public wage restraint and the reduction in current outlays, were followed by Zambia. Public sector enterprises achieved commendable results in introducing a tight and up-to-date system of management reporting that can provide decision-makers with most of the information they usually require. To that extent Zambia is in advance of other SSA developing countries with large public sectors and which are unable to

monitor their activities and steer their economies through troubled times.

Fourth, Zambia typifies the post-colonial experience of most SSA countries in acquiring foreign technology. Freshly installed politicians and administrators lacking technical support hastened to demonstrate to their electorate the structural changes that political independence allowed. The absence of reliable basic statistics precluded the preparation of sound feasibility studies. Turnkey factories were foisted on these countries, frequently too large for their requirements and export potential, and with technology ill-adapted to their factor and resource endowments. Import substitution became inefficient and found no dynamic outlets even in neighbouring countries. Regional trade lacked complementarities as countries engaged in easy import substitution, involving first-stage processing of commonly available raw materials, or end-of-process manufacturing/assembly. In this early period of accelerating industrialisation, little heed was paid to debt monitoring and hopes were pinned on an ever-expanding volume of foreign transfers.

Finally, one cannot but be impressed by the remarkable resilience of Zambia's social fabric, woven loosely from 73 tribes and with about as many dialects or languages, and which has withstood for well over a decade the burden of repeated reductions in real incomes and consumption.

To paraphrase a Nobel Poet Laureate - Joseph Brodsky - the quality of reality always lies in the search for a scapegoat. At the time of writing, Fund-sponsored measures, as backed by the World Bank, however widespread their acceptance in other Third World countries, have become the focal point of all past difficulties and frustrations in Zambia. New reforms to back up the policy turnaround have been slow to appear. Some discarded precepts may well have to be presented in repackaged form before light appears at the end of the tunnel in Zambia.

The remainder of this paper is divided into six sections, beginning with an overview of the Zambian economy from the time of Independence to 1986. It highlights the contribution made by the manufacturing sector, defined to exclude mining and quarrying and first-stage processing of agricultural raw materials (cotton ginning, cattle slaughtering). This is followed by the consideration of relative successes and failures, and the overall performance of manufacturing activities. Factor productivity, levels of protection and efficiency in the use of domestic resources to earn foreign exchange are discussed in section four. Then consideration is given to inter-industry linkages, with particular attention to those of the food processing sub-sector. Section six gives a synopsis of the liberalisation measures introduced in the early eighties and the effects they had on the private and parastatal manufacturing. Given the predominance of the latter in Zambian industry, improvements in their management practices and cost accounting are touched upon, since developments in this area are considered important for the future of industrialization: they deserve publicity, if not emulation in the Sub-Saharan region. The final section outlines the steps that followed the abandonment of the IMF programme of liberalisation, pulls together the findings and hazards some tentative conclusions concerning Zambian manufacturing. The annex contains basic data on the Zambian economy.

2. ECONOMIC OVERVIEW: STRUCTURAL CHANGE AND MANUFACTURING

Government intervention in the management of the Zambian economy has its roots in the colonial marketing monopoly of the major agricultural products. After the achievement of independence in 1964, the concurrent boom in copper prices raised fiscal revenue to a record level of 25% of Zambian GDP, allowing heavy public expenditure on economic and social infrastructure, along with the nationalisation of public utilities and transport, and the acquisition of majority shares in mining and in many manufacturing enterprises. The Rhodesian unilateral declaration of independence in 1965 and Zambia's efforts to reduce its strong economic links with its dissident neighbour, stimulated import substitution 'I/S) but also ushered in tight trade and foreign exchange controls.

State control was exercised through a pyramidal structure of public holding companies, with the Zambia Industrial and Mining Corporation (ZIMCO) the apex, embracing all formal mining, most of the manufacturing and some service activities. Thanks to high levels of protective tariffs and strict licensing, manufacturing output made rapid strides. State-controlled enterprises received additional support from cross-subsidization as and when required.

Urban centres were the main beneficiaries of Zambia's early development strategy. Urban living standards improved markedly during the 1964-74 decade when the nation's gross output rose at an average annual 4% rate in real terms. But in 1974 Zambia's index of export unit values - dominated by copper prices - reached its zenith and began a secular decline (see tables 1 and 2).

Table 1

Zambia's copper prices and derived ratios

Year/period	Current price US\$/MT	cents/lb	Const.1982 price cents/lb	Copper terms of trade (1970-74 = 100)*
1965-69 av.	1,333	60	195	127
1974	2,059	93	155	101
1970-74 av.	1,482	67	154	100
1975-79 av.	1,459	66	83	54
1980-84 av.	1,675	76	74	51
1985	1,417	64	61	43
1986	1,373	62	(51)	(40)
1987 (II)	1,546	69	(60)	(44)

* Note: Current price index deflated by the CIF value index of industrial countries' exports to developing countries.

Source: World Bank, Commodity Trade and Price Trends, various issues and International Monetary Fund, International Financial Statistics, various. Figures in brackets are author's estimates.

Table 2

Commodity terms of trade and exchange rates, 1970-85
(1980 = 100)

	1970	'73	'75	'77	'79	'81	'83	'85
Export unit value	68	81	61	63	92	82	76	68
Import unit value	26	36	50	56	78	102	93	91
Terms of trade	263	223	122	113	119	81	82	75
Export purchasing power	299	242	124	124	136	81	69	46
US\$/kwacha market exchange rate	1.4	1.5	1.6	1.3	1.3	1.1	0.8	0.4

Source: UNCTAD, Handbook of Statistics, 1986 IMF, International Financial Statistics, 1986.

Zambia's output of refined copper declined steeply from its 1976 peak of 713,000 metric tons to a low of 479,000 mt in 1985. During the seventies, the effect of the fall in copper prices was to reduce by over 40% the real value of Zambia's commodity exports. In terms of the country's overvalued national currency (kwacha)¹, copper production costs soared above the world market price. By 1970 tax revenue from mining activities had dropped to insignificant levels and mining companies ceased paying out dividends.

There were no offsetting developments. Industrial diversification was discouraged by the high exchange rate and by the stringency of price and foreign exchange controls. Capacity utilization in the mainly inward-oriented manufacturing industries plummeted as the procurement of imported inputs became ever more difficult, even with recourse to external borrowing and supplier credit.

The relative sectoral and branch performances during the 15 years following 1970 were such as to raise the shares of services and of manufacturing within a stagnating volume of output. Gross domestic investment's share in total output slid from 28% in 1970 to 24% in 1980 and to a mere 14% in 1985. Public and private expenditure on GDP followed a similar trend, but with the latter expanding at double the rate of the former (see tables 3 and 4).

These figures bring out the sharp deceleration after 1974 of the contribution of the manufacturing sector to GDP, until a recovery was sparked off in 1984 by a series of liberalisation measures. It also highlights the diminution over the twenty year span in per capita real income, as Zambia's population increased by well over one million.

Table 3
Growth of GDP & structure by type of expenditure & economic activity
1960 - 1985 (percent)

Real average growth of GDP	1960-1970	1970-1980	1980-1985
	8.3	1.0	-0.3
<hr/>			
A. <u>Expenditure:</u>	1970	1980	1985
	----	----	----
Govt final consumption	16	26	23
Private -----	39	55	62
Gross domestic investment	28	23	14
Exports	54	41	32
(Less) Imports	(37)	(45)	(35)
B. <u>Sectoral Contribution:</u>			
Agriculture	11	14	15
Manufacturing	10	19	21
Mining, quarrying, public util.	37	33	15
Construction	7	4	3
Wholesale & retail trade	10	12	13
Transport & communications	4	6	5
Other services incl. Govt.	20	27	28

Source: UNCTAD, *ibid.*; World Bank, Country Economic Memorandum, various.

Table 4

Sectoral growth of real GDP and of manufacturing sub-sectors
(per cent)

Contribution to GDP by:	1965-70	70-74	74-75	75-79	79-83	84-85*
Agriculture	-2.1	2.5	4.3	0.5	1.8	9.2
Mining & quarrying	0.4	0.8	-9.8	-2.2	4.7	-5.3
Manufacturing	11.4	8.5	-11.9	0.8	3.1	8.9
Per capita real GDP	-1.3	0.7	-5.4	-4.2	-1.4	0.0
Manufacturing index (Weight)						
(1973 = 100) (100)	n.a.	7.8	-4.6	-2.3	1.1	11.2
Food, bever.tobac. (31)	..	4.3	-2.1	-3.4	0.4	-22.0
Textiles, clothing (12)	..	7.2	-0.1	5.7	-22.5	25.7
Wood & wood prod. (4)	..	9.3	-34.4	-4.2	-13.4	21.1
Paper and p.prod. (5)	..	9.0	14.2	-4.5	-3.6	23.9
Chem.rubber,plastic(19)	..	13.6	-10.6	0.0	-4.5	8.3
Non-metallic miner. (7)	..	3.8	3.8	1.5	-3.2	107.0
Basic metals** (2)	..	6.1	-34.3	4.0	-5.9	-5.7
Metal fabr.& other (20)	..	10.3	-6.7	-13.2	3.5	18.4
manufacturing						

Notes:

* provisional 6 month annual rate

** excluding copper refining.

Source: Central Statistical Office, Monthly Digest of Statistics, various issues; World Bank, Zambia, Industrial Policy and Performance, 1984 and *ibid*.

The pattern of manufacturing sub-sectoral growth was generally uniform in expanding to the watershed year of 1974, led by chemicals, plastics and rubber (ISIC 35), followed by metal products and other manufacturing (ISIC 38-39). Together these sub-sectors accounted for about 40% of total manufacturing output. However, they were also part of the subsequent deceleration. Buoyant private and public consumption supported the textiles and clothing sub-sector (ISIC 32) in the face of the overall decline.

Behind these changes lay relative shifts in investment. Thus metal products and other manufacturing absorbed over 70% of fixed capital formation during the boom years and no less than 45% of all new investment during most of the 1975-85 decade. Fertilizer and fabricated metal products were the chief attraction. The latter branch, along with other manufacturing, were also the most resilient to decline in the years preceding liberalisation.

Zambia's manufacturing performance 1970-84 is distressingly poor even in the context of developing Africa, as UNIDO data, reproduced in Table 5, illustrate. The only Zambian sector to exceed the African average in growth was agriculture!

Table 5

African comparative growth rates, by sector,
at 1980 prices, (per cent)

Sector	Period	Zambia	All developing Africa
Agriculture	a) 1970-80	3.1	0.1
	b) 1981-84	2.3	1.7
	c) 1970-84	2.1	0.4
Total industrial activity (MVA incl)	a)	0.4	2.8
	b)	-2.8	0.9
	c)	0.3	1.1
Manufacturing (MVA)	a)	0.4	5.3
	b)	-4.4	2.1
	c)	0.5	5.0
Construction	a)	-1.7	8.4
	b)	5.4	-3.4
	c)	-3.0	6.0
Wholesale & retail trade, hotel etc.	a)	-2.0	3.7
	b)	-4.6	-1.0
	c)	-1.4	3.0
Transport, storage & Communications	a)	2.0	6.7
	b)	-1.4	0.8
	c)	0.7	5.7
Other services	a)	1.1	6.3
	b)	-0.7	2.8
	c)	1.6	5.9
Per capita	a)	-2.6	2.4
manufacturing	b)	-7.5	-0.9
value added (MVA)	c)	-2.6	2.1

Source: UNIDO, Statistics and Survey Unit.

The narrowing fiscal base, resulting from the drop in mining profits after 1975, led the authorities to finance current expenditure by heavy borrowing from the central bank, albeit whose credit policy remained generally restrictive for fear of exacerbating inflationary pressure. Deficit financing thus pre-empted credit required by the private sector, obliging it to turn to foreign lenders. However the deficit financing increased the money supply which, in the face of reduced import volume and declining domestic output, rendered price stabilization illusory.

What effects did structural change have on income distribution in Zambia? In the competition for dwindling resources peasants lost out to unionized industrial labour. Migration to cities became ever more

massive: between 1969 and 1980 the urban share in total population jumped from 29% to 43% and the rural/urban terms of trade deteriorated².

Whereas before the watershed year (1974) the rate of increase in the cost of living of low income groups trailed behind that of the higher ones, the reverse occurred in subsequent years and became pronounced after subsidies began to be removed in 1982. Indirect evidence suggests that the already skewed income distribution curve revealed by the 1976 household survey, became more so. Unemployment grew considerably as job openings in the formal sector grew at less than the natural population increment, and still less than the rate of urbanisation.

With Government firmly in control of the economy's commanding heights and wielding powerful policy instruments, one would have expected to see a weakening of the economy's economic, financial, and technological dependence on foreign sources. But there is little evidence to show that this occurred.

Zambia's GDP has historically exceeded national income (GNP) due to significant resource outflows in the form of investment income and expatriate salaries. These accounted for no less than one-sixth of domestic savings throughout the seventies--funds which could have been channelled into productive activities locally. Averaging some US\$ 135

Table 6

Selected capital flows, current kwacha million

1970, 1975, 1980, 1984

Principal inflows:	1970	1975	1980	1984
L/T private capital, net	-98	155	-99	-32
S/T ----- incl. parastat. equity	142	21	38	n.a.
L/T Centr. Gov. borrowing	14	85	259	129
Grants to Central Gov.	4	3	26	23
S/total	62	265	224	120
Principal outflows:				
Investment income, net	62	80	95	371
Salaries & gratuities	35	45	48	36
S/total	97	125	143	407
Net movements	-37	+141	+81	-287

Source: CSO, op.cit. and N.S.Makgetla, Investment in the Third World: the Zambian experience, University of Zambia, 1984.

million annually, this resource transfer represented 3-4% of Zambia's GDP. The legal resource outflow between 1975 and 1980 totalled kwacha 950 million, while the total value of new direct and indirect foreign investment in this period came to K 875 million! Some supporting data on the principal capital flows are provided in table 6.

In a parallel development, the share of non-concessional flows (including direct investment) in net financial receipts by Zambia dropped precipitously, as demonstrated by the figures below:

Table 7

Net Capital Flows to Zambia, 1970-1983

	1970	1975	1980	1983
a) Total net flows (US\$ mn)	27.0	311.1	353.1	218.1
b) of which non-concessional	13.5	112.7	57.8	1.7
b) as per cent of a)	50%	36%	16%	0.1%

Source: UNCTAD op.cit. table 5.5.

During the lean post-1975 period Zambia's foreign partners were loathe to engage in direct investment. As the profits of mining companies vanished, they and others sought Government guarantees on external borrowing which, in effect, facilitated the outflow of company funds, inter alia, through intra-firm procurement.

Debt servicing became progressively more burdensome. Zambia's long term debt service ratio climbed sharply from a mere 5.5% of the value of exports in 1970 to 18.6% ten years later i.e. considerably above the 13.6% average in 1980 for all middle-income developing countries. From 1975 onwards, the Government fell behind in its repayment obligations, creating an arrears pipeline of K700 million by 1983. Reschedulings followed, allowing the debt service ratio to fall to 16.2% in 1984. In the meantime, heavy drawings on the IMF brought Zambia's non-negotiable debt to that agency to SDR 640 million, equal to 4/5 of the country's annual export earnings. Investment during the late seventies rose and fell with the level of grants received by the Government, plus IMF loans.

During this period about one-third of all parastatal investment was financed by foreign funds borrowed by Central Government. Since the mining sector was still perceived as the most promising one by the national authorities, foreign lenders and shareholders alike, concentration of investment in mining was perpetuated to the detriment of sectoral balance and industrial diversification. Structural change in Zambia in the period 1973-1980 was insignificant, as can be judged from a rough breakdown of industrial output into:

- consumer goods (ISIC 31,32,39)
- intermediates (ISIC 33 - 37)
- capital goods (ISIC 38).

The share of the first category rose from 57% in 1973 to just over 60% in 1980, intermediates' share dropped from 28% to 25% and that of capital goods remained unchanged at 15%.

Investment in manufacturing, in real terms, stayed at about one-half of its 1975 level through the early eighties. New investment stuck to traditional paths, failing to reduce in any substantial way Zambia's external dependence and to promote self-reliance. Import substitution continued to focus on consumer goods³. Investment in the manufacture of agricultural implements was put off by the absence of rural credit and adequate extension support. The parastatals continued to be guided by short-term market considerations, as determined by the structure of purchasing power and hence biased towards the production of non-essentials⁴.

The ownership structure of manufacturing enterprises for the years 1973 and 1980 is set out in table 8. The wholly state-owned units include statutory bodies and establishments of central and local government. Parastatal companies are those in which ZIMCO had majority shares, whether they were fully or partly owned. The private companies include a few in which ZIMCO had minority holdings.

The important food, beverages and tobacco sub-sector was dominated by State-controlled firms throughout the years under review.. It should be remembered that 45% of parastatals were jointly owned with foreign interests and that as late as in 1982 the foreign equity share in more than one-half of these joint ventures exceeded 40%.

Table 8

Ownership structure of manufacturing enterprises, 1973, 1980
(per cent of all enterprises)

ISIC No.	S/Sector		Wholly State		Parastatal		Private	
	1973	1980	1973	1980	1973	1980	1973	1980
31	47	46	1.6	6.6	70.9	66.7	27.5	26.7
32	9	12	0.0	15.7	23.1	41.8	76.9	42.5
33	3	3	0.0	38.6	28.3	13.0	61.7	48.4
34	4	4	9.3	15.4	9.3	11.1	81.4	73.5
35	15	11	0.0	0.0	54.6	62.2	45.4	37.8
36	5	5	0.0	0.0	37.1	64.1	62.9	35.9
37	1	2	0.0	0.0	0.0	0.0	100.0	100.0
38	15	15	0.0	0.0	23.7	19.2	76.3	80.8
39	negligible		0.0	0.0	0.0	0.0	100.0	100.0
3	100*		1.1	6.8	50.6	50.7	47.2	42.5

Note* Totals do not add up to 100 because of rounding.

Source: CSO, Census of Industrial Production 1973, 1980 and author's calculations.

The share of privately owned enterprises in total manufacturing output shrank from 47% in 1973 to 42% seven years later. The private firms outweighed the publicly owned ones in the relatively small or then

slow-moving sub-sectors e.g. paper and printing, basic metals and metal product fabrication, as well as in other manufacturing. However, these were to become the more dynamic activities during the years of liberalisation.

It might be useful in the light of the abrupt demise of economic liberalisation in May 1987 to cast a glance at the operational profile of a large loss-making food manufacturing parastatal to highlight some of the major problems that have to be resolved under Zambia's renewed system of administered economic management.

The enterprise comprises four cereal mills and enjoys monopoly conditions of sale. In two of the factories the machinery is around 50 years old. For want of spare parts and repairs, milling coefficients are low and operating costs high. Before price decontrol, these costs could not be passed on to the consumers. Moreover, while the landed price of wheat rose by over 50%, the ex-factory price of flour had to be kept unchanged by administrative fiat. Losses were high and obliged the company to default on its payments to the cereal purchasing and importing agency in 1982. The following year was taken up with the preparation of a rehabilitation study and then 3 more years were spent on mobilizing the necessary foreign finance --just when praise was being heaped on Zambia for its bold reforms by all donors-- and ordering equipment.

Meanwhile, the by then unencumbered enterprise raised the price of its flour --as agreed with the retailers--from K50.5 per 90kg bag to K68.0, causing offtake to contract proportionately. In 1986, as the excess liquidity and auctioning of foreign exchange accelerated the price spiral, the retail price of flour had to be raised from K147.4 to K224.0/bag. The price elasticity of consumer demand took its toll of flour sales, which dropped to less than one-half of their pre-liberalisation level!

Behind these figures is a radical switch in the main constraint on the enterprise: from the supply side because of foreign exchange unavailability--to the demand side as the national currency underwent a massive devaluation and dragged down urban consumer purchasing power. Is another reversal in these constraints in the offing?

We shall consider in the next section, at a lower level of aggregation, how the manufacturing branches and sub-sectors fared in the context just described. Which activities contributed most to achieving development objectives or helped to ease the country's acute foreign exchange constraint, and at what cost?

3. MANUFACTURING: PROBLEMS AND PERFORMANCE CLOSE-UP

Industrialisation objectives were enunciated in Zambia soon after independence in two White Papers and widely publicized. They echoed the conventional wisdom among the newly independent African states and were not tailored to Zambia's administrative and policy implementation capacity⁵. Then in the Mulungushi Declaration of 1968 the Government set itself the task of:

- decentralising industrial location away from the rail line;
- encouraging labour-intensive techniques of production and small scale industries utilizing domestic products;
- promoting import substitution of intermediate products and of essential consumer goods.

It will be seen that these politically-determined objectives were not realized during the past two decades for want of feasible strategies for attaining them. Two fundamental issues were not explicitly addressed, namely:

- how to develop an alternative source of financing new manufacturing investment, as opposed to the historical, copper-generated investment;
- how to promote manufacturing activities that would be net earners of foreign exchange.

These lacunae had very negative effects on industrial growth and structural change in the aftermath of the copper boom. As late as the beginning of 1987, Central Bank reports contained no data on medium and long term loans to the economy or to sectors; no Industrial Development Bank was in existence. The Development Bank of Zambia's loan operations to the manufacturing sector amounted in 1985/6 to only K22.5 million. Most of them involved the rehabilitation/extension of existing large enterprises, plus the establishment of a few small-scale industries. The share of the manufacturing sector in total loan operations had shrunk from an average of 45% during the 1975-85 period to 35% in 1985/86.

In respect of import substitution, it was incontestably the main driving force behind industrial growth until the beginning of the seventies. Manufactured imports' share in the total consumption of manufactures dropped from 66% in 1965 to 46% in 1972. Import substitution accounted for 55% of the growth of manufacturing output in this period, while domestic demand for 44% and exports for a mere 1%.

In subsequent years Zambian manufactures hardly exceeded 2% of the value of total exports and domestic consumption/demand lacked dynamism, as per capita incomes declined and the distribution of income did not favour the development of mass markets.

There was relatively little policy impact on the spread of import substitution to intermediates. Between 1964 and 1981 the share of imports of such goods in manufacturing gross output declined from 26 to

23 per cent. Indeed import dependence of manufacturing, as expressed by import coefficients from input/output data, even rose slightly between 1975 and 1980 (see table 9).

Table 9

Import coefficients of manufacturing by branch, 1975, 1980
(per cent of total intermediate consumption)

	1975	1980

<u>ISIC Branch</u>		
311+312 Food manufacturing	12.1	6.5
313+314 Beverages & Tobacco	10.8	6.3
32 Textiles, clothing, leather	63.0	31.3
33 Wood & wood products	18.5	16.3
34 Paper & printing	48.1	29.8
355 Rubber products	8.3	58.5
35-355 Chemicals	70.6	72.2
36 Non-metallic minerals	2.9	4.7
37 Basic metals	84.6	77.3
38 Metals & machinery	12.9	34.7
39 Other manufacturing	60.6	54.3
<hr/>		
Weighted Average	34.5	35.3

Source: CSO's I/O tables and author's calculations.

The chief cause of the rise in import dependence during the 1975-1980 period was the start-up or capital deepening of heavy manufacturing industries (tyres, vehicle repair and assembly, fertilizers, plastics, cement, lime and bricks. However, the industries that were the more important in terms of value added and employment -- food, beverages, tobacco, textiles, clothing, paper and printing -- increased the share of local products in their intermediate consumption.

Of course, the extent of enterprise import dependence within the context of a tight foreign exchange constraint directly determined the level of capacity utilization. Zambia was no exception to the severe underutilisation which characterized African industrialization⁹.

Unweighted branch averages for the 1972/3 - 1982/3 period, as extrapolated by the World Bank staff from their sample suggest that, with the sole exception of textiles, clothing and leather, only about 50% of installed capacity was utilized. Variation between individual enterprises in the same branch was large. Some general improvement was noticeable towards the middle seventies, with the average for manufacturing as a whole rising from 43 to 70 per cent of capacity. But with the economic decline the figure dropped to 52% by 1983, with three quarters of sampled enterprises participating in the deterioration⁹.

Given the perennial foreign exchange scarcity, an analysis was conducted in the University of Zambia of industrial sectors' interlinkages and of their net foreign exchange absorption/contribution⁹. Only food manufacturing figured among the top third of

the 29 branches ranked according to economy of foreign exchange use, i.e. the consumption of imported goods and services less export earnings. Three other branches, (producing mainly tyres, cement, lime and bricks, fabricated metal products and vehicle assembly) ranked high according to the forward linkage criterion, but fared poorly on the backward linkage one.

Were there compensating economic and social aspects to Zambia's lacklustre manufacturing performance in terms of employment and income generation, regional dispersion, labour and capital productivity?

The concentration of formal employment along the line of rail in the Copperbelt province did drop slightly between 1973 and 1980 --from 50% to 46% --with Southern province the gainer. But there was relatively little change in the spatial concentration of firms so that, in 1980, just two provinces contained 84% of all industrial units.

Formal employment in manufacturing rose moderately from 38,200 in 1970, to 44,300 in 1975 and to only 48,490 by 1985, when it made up 13% of the active labour force. All of the increment concerned Zambian nationals. By mid-1985 foreigners made up only 2.6% of manufacturing employment, i.e. less than the national average (3.3%). The increases in formal employment were accounted for by publically-owned or controlled enterprises, the private ones discarding some employees in the intervening years. The ratios of increments in employment to that in real manufacturing output suggest the absence of gains from economies of scales and very slight improvements in labour productivity, particularly when capital assets per worker rose rapidly in the years prior to 1975.

Manufacturing value added (MVA) in constant 1970 prices expanded during the 1965-70 period at a high annual average rate (13%), dropped sharply in 1974-5 and followed a declining trend thereafter. Some improvements in MVA per worker occurred in several industrial subsectors - tobacco, textiles and clothing, wood and furniture, paper and printing and "other manufacturing"¹⁰. But, in the 15 years to 1985, hardly any structural changes took place within the manufacturing sector.

The ordering of subsectors in terms of MVA at end years remained virtually unchanged (UNIDO, *op.cit.*, 1985, page 8). Beverages (mainly brewing) and tobacco processing stayed in the lead throughout. Minor shifts occurred among the next four highest-ranking subsectors (textiles, metal products, chemicals, foods). Although the combined share of consumer goods in total manufacturing output fell from just over 60% in 1970 to 56% in 1985, their production continued to dominate Zambian manufacturing output. In parallel, the combined share of capital goods (fabricated metal products) and of intermediate goods (chemicals, rubber and plastics) rose from 25% to 28% of manufacturing GDP.

The year 1975 was the last one when customs tariffs determined the allocation of resources in Zambia. Thereafter that function was performed primarily by licenses-cum-foreign exchange allocations. In principle, these were only issued for goods which did not compete with local products or when these were in short supply even at less than full capacity operation of the firms concerned. As with all administrative controls, authorisations to import were at times made available for

extra-economic considerations. Under the regime, domestic producers, in principle, could enjoy absolute (open-ended) protection. Because importers of consumer goods received relatively few import authorisations, local producers of such items were fairly isolated from world prices and quality norms. Although the sale prices of local products required the approval of the Prices and Incomes Commission, a cost-plus formula was generally applied with no allowance for quality differences. As a consequence, local consumer goods manufacturers were able to attract proportionately more investible funds, perpetuating Zambia's historical bias against import substitution of intermediate and capital goods.

In a related development, the composition of imported manufactures changed, as shown in Table 10. The copper boom raised the

Table 10

Imports By End Use, Selected Years, 1968-81
(percent)

	<u>1968</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>
<u>Imports of</u>					
1. Consumer goods	26	34	22	20	20
of which:					
food	..	8	5	5	..
other non-durables	..	13	9	8	..
durables	..	13	8	7	..
2. Intermediate products	48	44	56	55	57
3. Capital goods	26	22	22	25	23

ALL IMPORTS - - - - - 100 - - - - -					

Source: World Bank, Zambia, op.cit., 1984 and Industrialisation in Sub-Saharan Africa, Table 12.

shares in total imports of both consumer and of capital goods. But the latter's share slumped heavily in the "watershed" period and failed to recover subsequently.

The shifts in the composition of imports had unfavourable repercussions on fiscal revenues as ever more goods facing relatively low customs charges entered (or came in duty free under the Investment Code). In addition, the continuing use of specific rates of duty rendered tariff revenue price-inelastic. As the combined result, while the unit value of Zambian imports in the early 1980s increased strongly, the customs revenue which was collected contracted by about 40%, until a correction in trade-related revenue set in after the revision of the Customs Act in 1983.

As to the degree of import substitution (I/S) that has been achieved, a Zambia University study (V. Sheshamani, 1985) related changes during the 1964-80 period in domestic industrial output to increments in their total supply. For all such goods, the study found that the derived import substitution index (known as the Chenery-Desai coefficient)¹¹ rose by a mere 3%, largely because of the negative performance of mining and quarrying since 1975. The I/S index for manufacturing proper, however, rose vigorously - not so much during the boom years, as in the grimmer ones that followed (see Table 11).

Beverages and tobacco, textiles and base metal products recorded acceleration in their rates of import substitution between sub-periods 1970-74 and 1974-80. Since their contribution to MVA was preponderant, the whole of Zambia's manufacturing sector's index of import substitution increased correspondingly from 0.14 to 0.37. No significant correlation was found between I/S indices of manufacturing production and of the volume of manufacturing exports during the 1970-80 period.

Table 11

Rates of Import Substitution in Manufacturing
1970 to 1980
(per cent)

	1970-74	1974-80	1970-80
All Zambian products	0.00	-0.07	-0.04
All Manufacturing, of which:	0.14	0.37	0.33
foods	1.61	0.81	0.57
beverages and tobacco	0.02	0.18	0.12
textiles and clothing	0.42	0.74	0.70
wood and products	0.56	0.50	0.54
paper and printing	0.89	0.13	0.64
chemicals, rubber, plastics	0.43	-0.07	0.32
non-metallic minerals	2.27	0.25	0.40
base metal products	- 0.32	0.03	0.63
fabricated metal products	0.75	-0.14	0.60
other manufacturing	0.00	-0.07	-0.04

We have seen that most import substitution in Zambia occurred in the consumer goods industries, but what were the chief propellants and hindrances? The system of protection since 1975 afforded domestic manufacturers full formal protection. It over-rode the price advantage over competing imports provided by customs tariffs. The licensing authorities had wide latitude in interpreting the criterion of the essentiality of imports - for the economy and the consumers. But temporary interruptions in domestic supplies, aggravated by ignorance of the real levels of stocks, often gave rise

to the authorisation of significant quantities of competing imports to the determinant of domestic capacity utilisation.

The comprehensive protective regime did allow substantial differences to develop between domestic and CIF border prices of manufactures. These differences ranged in 1981 from 50% to 140% for a sample of manufactured products studied by World Bank staff and which included edible oils, detergents, metal furniture, structural metal products, plastic and jute bags, cotton cloth and suitings (World Bank, op.cit, 1984). It should be noted that several of these are from subsectors that were resilient to the economy's overall decline after 1975. But consumer welfare need not have borne the full weight of these price differentials in a landlocked country like Zambia, where frontiers are relatively porous and border traffic intense. In the next section, we shall examine factor productivity and the relative efficiency of manufacturing activities.

4. PRODUCTIVITY, COMPETITIVENESS AND EFFICIENCY OF MANUFACTURING

In the boom years, 1964-75, while manufacturing employment grew at over 10%, the index of manufacturing output expanded at an even higher rate, as assets per workers rose strongly. In wood and furniture making, capital intensification was very marked as the result of declining employment and a rapid increase in investment. In non-metallic mineral products, assets per workers increased by almost 75% over a four year period and impressive rises in investment were achieved in paper products, chemicals, rubber and plastics, with smaller increments in foods, beverages and tobacco. For a sample of six manufacturing sub-sectors for which elasticities were calculated by the Central Statistical Office (CSO), in three of them, rising capital inputs "explained" two-thirds or more of the output increment.

Thereafter, most of the rising factor productivity trends were reversed. Although assets per workers continued to rise for several years in parastatal firms, the relative movements of factors and output in the whole of manufacturing suggest a drop in the productivity of both labour and capital.

A more precise measure of factor productivity is that of their combined effect on output, also taken to encompass the impact of technological change. A fall in the value of total factor productivity (TFP) is tantamount to an increase in the unit cost of production. Hence such an index is of particular relevance to the study of price competitiveness of a country with a heavily over-valued currency (such as Zambia) that impedes export diversification / expansion. World Bank computations of TFP changes in Zambia over the 1965-80 time span, along with those of factor/output ratios are reproduced in Table 12.

For manufacturing as a whole, TFP declined over the 15 year period, although three relatively minor subsectors out of 17 (leather, rubber and mineral fuels) recorded some TFP gains. In the first five years, and falling within the boom period, both TFP and MVA rose. In the following five years, MVA continued to rise but TFP began its long decline as output shrank. The proximate cause of the continuing TFP deterioration in the face of expansion in capital assets was difficulty in assimilating the technology embodied in new equipment.

Again in respect of the whole manufacturing sector over the 15-year span, only a marginal improvement took place in labour productivity, while that of capital fell. As increases in capital investment outpaced increments in output, the capital/labour ratio rose in most sub-sectors.

What then were the effects of the cost-raising developments on the exports of Zambian manufactures (SITC classes 6 - 8, less 67 and 68), termed in official documents as "non-traditional" ones? As a very small supplier of such products on the world market, Zambia could in no way influence foreign demand and prices. The fiscal

Table 12

Changes in Total Factor Productivity and Factor/Output Ratios
1965 to 1980
(per cent)

<u>Subsector</u>	<u>TFP</u>	<u>Factor Ratios</u>		
		<u>Capital/ Labour</u>	<u>Output/ capital</u>	<u>Output/ Labour</u>
Food-	4.5	1.9	-6.0	-4.0
Beverages and Tobacco	- 0.1	5.0	- 1.9	3.1
Textiles-	1.2	8.5	- 5.8	2.7
Clothing	- 7.4	19.8	-17.1	2.7
Leather Products	8.4	- 0.5	8.6	8.1
Wood & Products	- 0.6	16.6	- 9.8	6.8
Furniture	- 1.8	4.0	- 3.5	1.0
Paper & Products	- 2.7	10.1	- 9.7	0.4
Industrial Chemicals	- 5.8	18.9	-13.5	5.4
Other Chemicals	- 2.7	2.7	- 3.8	- 1.1
Petroleum & Coal	4.0	-14.2	7.8	- 6.4
Rubber Products	1.0	- 3.7	2.7	- 1.6
Plastics	-13.8	17.6	-19.2	- 1.6
Non-metallic Minerals	- 3.8	8.8	- 7.1	1.7
Base Metals	- 9.2	3.8	-10.7	- 6.9
Fabricated Metals	- 1.7	- 0.6	- 1.0	- 1.5
Other Manufactures	- 5.7	12.9	-10.7	2.1
All Manufactures	- 3.8	7.7	- 6.8	0.9

Source: World Bank, op.cit, 1984, Table 2.5.

incentives and small export subsidies provided Zambian exporters with very little advantages. In 1982, for instance, the total value of the Export Subsidy Fund came to a mere K35,000 and went exclusively to two parastatal firms! The only tariff preference received by Zambian exporters of manufacturers in industrially developed markets were those under the GSP and hence were common to all other developing countries, including the NICs.

The export value of Zambia's manufactures in 1979 came to about US\$10 million, that is less than one percent of the country's commodity export earnings. Of this, over 95% were absorbed by neighbouring African markets, where they enjoyed a definite transport cost advantage and which was large enough to offset the negative effects of the over-valued exchange rate and any quality differences or consumer bias. Three years later, the export structure showed little change and it was only by 1984 that some diversification became apparent in the destination of Zambian exports with the EEC and Asian markets beginning to acquire importance.

In 1979 there were eight export categories of any consequence, that is with export values exceeding US\$0.5 million. Ranked by value these were as follows: non-metallic mineral products (cement and lime); machinery and transport equipment (simple agricultural equipment and assembled vehicles); rubber products (tyres from imported latex); refined petroleum (using imported crude oil); sugar and molasses; chemicals and compounds (fertilizers and explosives); processed cotton and, finally, electrical machinery and appliances (assembled).

By 1982, only one product could be added to this list - natural abrasives. Unpublished trade data for 1984 show that varnishes and paints had replaced sugar and molasses, as the latter products were pre-empted by domestic demand. New additions to the list above included paper products, knitted man-made fabrics, base metal goods such as rails and wire, plus small quantities of batteries and ready-made garments. This export structure is replicated in a dozen or so other African countries.

Leaving aside the cost of new market penetration for the Zambian manufacturers and abstracting from their problems with the acquisition of inputs, how did they manage to be competitive abroad through periods of shrinking purchasing power at home? In constant 1966 kwachas, the wholesale prices of Zambian manufactured goods almost quadrupled between 1974 and 1983, that is rising at an average annual rate of about 16%, whereas the average unit prices of all imported manufactures by Zambia's neighbours (and by other non-oil exporting developing countries) increased by only 9% per annum. Hence, in terms of domestic inflation alone, Zambian exportables were uncompetitive *prima facie* in foreign markets. This encumbrance was additional to those resulting from falling capacity utilisation and the unfavourable level of the value of the kwacha.

A plausible answer to the question is that the shrinking domestic market still allowed Zambian exporters to cover their variable costs, even if that required fewer provisions for amortisation and maintenance. Exports could be priced at marginal cost, passing on to the domestic consumers the difference between average and marginal costs - made possible by the insulated state of the domestic market and the custom of the authorities to sanction cost-plus pricing. In this regard, the investigations by the World Bank of the extent of effective protection (ERP) afforded value added in manufacturing in Zambia by its trade regime, as well as of the domestic resource cost (DRC) of earning foreign exchange, are relevant.

The combined price-raising effect of tariff-cum-licensing related to value added in an activity indicates the extent to which the activity is privileged and allowed to maintain an uncompetitive level of operation. The sample of 16 manufacturing firms, mentioned above, yielded ERP and DRC values for 1975 and 1981/2 that are listed in Table 13.

These sample results are characterised by very variance within product groups because of differences in the performance levels of

individual enterprises. As is common in developing countries, the hierarchy of ERP levels follows that of nominal tariffs, with consumer goods receiving the highest protection and heavy intermediates and capital goods the lowest.

The values in Table 13 indicate that, in the sample, capital goods manufacture was the least likely to attract investment on financial profitability considerations during the late 1970s, as it

Table 13

Effective Rates of Protection (ERPs) and Coefficients
of Direct Resource Cost (DRCs), 1975 and 1981/2 (16 firms)

Type of Manufacturing Activity	ERPs 1975* (%)	DRCs 1981/2+
Consumer goods, of which		
food products	67.3	0.47
other non-durables	342.4	1.53
durables	472.9	2.58
Light Intermediate Goods	182.5	1.60
Heavy Intermediate Goods	29.8	3.02
Capital Goods	59.7	1.45
All Goods (unweighted)	160.6	n.a.

* Expressed in ad valorem CIF terms.

+ Relative efficiency increases as values fall below unity.

Source: World Bank, op.cit, 1984, Tables 3.3 and 3.6.

received about one-eighth of the social subsidy enjoyed by producers of consumer durables. The value added that was generated by the latter, thanks to the protective regime, was more than four times what would otherwise have been possible! Little wonder that consumer goods manufacture grew faster than other subsectors and that the extension of import substitution to intermediate and capital goods did not take place to any substantial degree.

An approximation to the international competitiveness of products is provided by another widely-used measure: the ratio of the economic costs of domestic factors of production per unit value of output, all valued at free trade (international market) prices, the DRC¹². For Zambia, the DRC calculations made by the World Bank's staff in 1983 were based on a 24 firm sample - most of them parastatals, but which nevertheless accounted for one fifth of total industrial output in 1981/82. As with the rates of effective

protection (ERPs), intra-group variance was great, except for the two capital goods manufacturers. Thus the subsector averages listed in Table 13 are not necessarily representative of the whole of manufacturing in Zambia. But, faute de mieux, they are consistent with what has already been ascertained regarding productive efficiency and competitiveness.

As one might expect, food industries that are based on domestic raw materials have a higher comparative advantage than those producing consumer durables and heavy intermediates - both being import dependent. The relatively low DRC value for the two capital goods producers is explained by the low level of protection they received, which more than offset their high import dependency (low value added). As will be shown in the next section, domestic procurement of inputs by producers of heavy intermediates and of consumer durables (six firms in the World Bank sample) was low and did not expand appreciably between 1975 and 1980.

5. LINKAGES AND FOOD MANUFACTURING

The prime objectives of Zambian planners during the past 15 or so years have been to:

- increase the levels and quality of consumption;
- create more jobs;
- broaden import substitution to the production of intermediate and capital goods.

Such objectives were, of course, subject to minimising net foreign exchange usage. The allocation of a shrinking quantum of investible resources required difficult trade-offs and much scarce manpower was devoted to the collection of reliable data through family budget surveys, censuses and follow-up visits to respondents¹³.

Zambia's input-output table for 1975 was subjected to statistical analysis in the University of Zambia in 1984. The results pointed not only to the economy's high import dependence, but also highlighted the practical difficulty for planners to select for priority treatment the subsectors which would unequivocally lead to the maximum attainment of proclaimed national objectives. The study also demonstrated the Zambian economy's structural bias, reflected, *inter alia*, in the high correlation between the intensity of inter-industry linkages and the potential for creating new jobs in the different subsectors¹⁴.

According to the authors, were Zambia's planners to be guided solely by analytic indicators, they would recommend channelling public investment into services rather than, say, agriculture or

construction. Table 14 sets out the ranking of manufacturing subsectors in respect of the intensity of their backward and forward linkages with the rest of the economy in 1975. The indices used are those associated with Diamond and Hazari¹⁵.

If one were to select for particular promotion the subsectors that ranked highest according to both linkage intensities, they turn out to be those with a relatively high import content of inputs and not in activities reflecting Zambia's comparative advantage. The planner's dilemma is further illustrated by the data in Table 15.

The promotion of the most promising subsectors in the generation of inter-industry linkages in 1975 would not have contributed most efficiently to the attainment of many of the other major development objectives!

A comparison of the 1975 and the 1980 Zambian input-output tables brings out several new features, while confirming such earlier findings as rising import-dependence. Thus, between the two benchmark years and for all the 29 subsectors together, the ratio of the intermediate consumption of domestic goods to gross output (supply) declined somewhat - from 24.4% to 22.7%. For the whole of manufacturing, the proportion of purchases from domestic sources to

Table 14

Manufacturing Subsectors Ranked by their Linkage Effects, 1975.Subsectors Ranked By The Intensity of Their:

<u>Backward Linkages</u>	<u>Forward Linkages</u>
1. Non-metallic mineral products	4.
2. Rubber products	3.
3. Fabricated metal products	2.
4. Beverages and tobacco	7.
5. Food processing	8.
6. Wood and wooden products	10.
7. Textiles and apparel	6.
8. Paper and paper products	9.
9. Base metal products	1.
10. Other manufacturing	11.
11. Chemicals	5.

Source: Computed by the author from Annex Tables in Sheshamani and Hasan, op.cit.

Table 15

Development Objectives Related to Sub-sectors, 1975.

<u>National Objective</u>	<u>Top ranking subsectors according to achievement potential</u>
Maximising linkage effects	Rubber and fabricated metal products
Maximising consumption	Subsectors 1,2,4,5,12,16,17, 20,23,29*
Maximising employment products,	Fabricated metal wholesale and retail trade
Economising foreign exchange	Subsectors 2,5, plus five service sectors, mining, beverages and tobacco

* The definitions of the 29 subsectors used in the 1975 I/O table are found in Annex, Table 2.

Source: As for Table 14.

total manufacturing output also dropped, but even less markedly (from 65.5% in 1975 to 64.6% five years later). But there was strong linkage growth between the productive sector of the Zambian economy as a whole and its service sector, giving rise to a higher overall level of intra-sectoral trade in 1980 per unit increment in final demand (supply) than in 1975.

Table 16

Characteristics of the Food Processing Subsector

(A) = 1973 (B) = 1980

ISIC sub-sector	Number of Firms		Employment		Value Added	
K million	A	B	A	B	A	B
311/2 Food processing	105	111	11.3	16.6	35.2	71.0
3111 Meat preparation	18	15	1.3	1.3	2.0	8.0
3112 Dairying	12	3	0.8	1.1	3.5	3.1
3113/4Canning	7	6	0.4	0.2	1.1	0.7
3115 Edible oils/fats	3	2	0.4	negl.	2.1	0.2
3116 Grain milling	16	27	2.4	3.5	10.5	-2.9
3117 Bakeries	38	47	1.9	2.5	4.8	25.2
3118 Sugar refining	3	3	4.2	7.3	9.9	31.7
3119 Confectionery	4	3	0.1	0.1	0.2	0.4
3121 Other foods	4	5	0.3	0.6	1.1	4.7
<hr/>						
	Direct Subsidies		Indirect Taxes		Net Profit	
	K million		K million		K million	
	A	B	A	B	A	B
311/2 Food processing	8.4	0.0	-6.9	1.3	11.1	0.2
3111 Meat preparation	1.4	0.0	-1.4	0.0	-2.0	2.3
3112 Dairying	1.0	0.0	-1.1	0.0	1.2	0.2
3113/4Canning	0.0	0.0	0.0	0.0	0.2	-1.1
3115 Edible oils/fats	0.5	0.0	-0.5	0.0	0.9	0.1
3116 Grain milling	5.6	0.0	-5.6	0.1	5.7	-15.5
3117 Bakeries	0.0	0.0	0.0	0.5	1.5	6.8
3118 Sugar refining	0.0	0.0	1.4	0.7	2.9	5.5
3119 Confectionery	0.0	0.0	0.0	0.0	0.1	0.1
3121 Other foods	0.0	0.0	0.0	0.0	0.5	1.9

Source: Central Statistical Office, Census of Industrial Production, 1973 and 1980, Lusaka, CSO.

For the food processing subsector, several developments call for further comment:

- The proportion of imports in the subsector's total purchases fell by about 50% between 1975 and 1980.
- The number of subsectors purchasing processed foods as inputs increased rose by two, while the number of subsectors supplying inputs to

the food industry fell by six. But the volumes involved in the two benchmark years differed substantially and the net result was the intensification of trade between food manufacturing and the rest of the Zambian economy.

c. Exports of processed food represented only one percent of the subsector's output in 1980, while it made up 1.5% five years earlier.

The chief characteristics of the food processing subsector in Zambia are set out in Table 16. Its structure changed somewhat during the 1970s with the sharp curtailment in the number of dairying establishments as expatriate farmers departed. The number of grain mills and bakeries rose strongly in line with urban demand, the new taste for bread as a staple and the availability of cereals at subsidized prices. In 1973, direct subsidies to the mills equalled the amount due in direct taxes on their output. After direct subsidising ended, their value added became negative.

Meat processing and dairying also made no net contributions to public revenue in 1973 but began to pay profit taxes by 1980. The spectacular and profitable expansion of baking activities merits attention - a widely-shared African phenomenon - as well as the more than fourfold increase (in current kwachas) in the value added and profits of the as-yet-small "other foods" subsector.

The next section discusses the various reform measures that began to be introduced towards the end of 1983 and which culminated in the free floating of the kwacha against the US dollar in 1985. They had a determining influence on the output of Zambian manufactures, on their competitiveness at home and abroad and on the efficiency of resource use.

6. ECONOMIC LIBERALISM AND PARASTATAL PROFITABILITY

6.1 Moves To Liberalisation

The Zambian economy was in deep trouble by the start of the present decade, notwithstanding some IMF-oriented tinkering from 1976 onwards. The nine years separating the end of the copper boom and 1983, when the first radical reform measures began to be implemented, were marked by negative domestic savings, the drop of the investment/GDP ratio from 30% to 23%, and the continued outflow of resources in profits, salaries and interest, leaving national income at 88% of GDP.

The current account deficit grew under the pressure of defence expenditure in the face of armed conflict in neighbouring countries and lower revenue from external trade. Development budgets shrank; productive assets went without maintenance and repair, giving rise to net dis-savings. In 1982 the country's terms of trade index was at one-third of its 1974 level and the deficit on current account came to 20% of GDP. Gross external reserves represented only 2 months of normal imports, while external liabilities amounted to US\$ 4.5 billion.

Commercial credit began to be unavailable. By January 1983 the central bank ceased reimbursing capital on outstanding loans and sought the first of a series of re-schedulings through the London and Paris clubs.

To make matters worse, drought during several years cut into the supplies of food and of industrial crops. Price, exchange and trade controls were tightened and the parastatal sector became a net drain on public resources as profitability considerations were made to yield to the maintenance of employment and consumption levels. Excessive price-controls on flour, sugar and beer made these firms operate at a considerable and frequently mounting loss. Only enterprises producing non-essential goods like textiles and capital goods succeeded in remaining solvent. For the well-protected manufacturing enterprises in the state-controlled sector, financial efficiency was seen to depend on the ability to charge what, in effect would have been monopolistic prices.

Following a 20% devaluation of the kwacha at the end of 1982, an IMF-sponsored stabilization programme was initiated. Prices were decontrolled except for a few basic items. Agricultural prices were raised and wages and urban salaries restrained. The volume of imports over a single year was pared down by one-third, which brought the trade deficit down to 9% of GDP. Tax incentives were made available to exporters of non-traditional goods; no foreign exchange involved imports were freed and competition in the domestic market enhanced by lower tariffs on a number of imports. In mid-1983 a flexible foreign exchange system replaced administrative allocation, which brought the kwacha down a further 22% within a year and gave exports a much needed fillip.

What were the effects of these measures on manufacturing? The sector was slow to respond to the package and the index of industrial production rose by 10% only in 1985, i.e. after the auctioning of foreign exchange had brought the kwacha down to about 1/4 of its dollar value two years earlier. The initial period of liberalisation and economic revival--mainly in agriculture and services --saw the industrialists and would-be investors unwilling to risk their capital because of uncertainty regarding the permanence of the reform measures and which politicians did not dispel. The amount of foreign exchange that the flexible system made available to entrepreneurs was no greater than in pre-reform days. They were thereby unable to re-tool, expand or get more raw materials from abroad in order to raise capacity utilisation and lower their costs of production. The only enterprises which benefited from the new export incentives were those able to export from their then available capacity and, therefore, at the expense of satisfying domestic requirements.

The 50% retention of export earnings allowance played a big part in shifting some purely I/S manufacturing into exports between 1984 and 1985. Aided by the ever-lower kwacha, the number of exported manufactures, mainly to neighbouring markets, did increase, but the quantities involved were very small. Among the new export products were lead oxides (to Tanzania and Malawi), varnishes, lacquers and paints (to SSA countries), chemical preparations (to the RSA), paper rolls and stationery (SSA and a little to USA), raw cotton and fabrics (EEC and SSA), asbestos-cement pipes (SSA), dry batteries (Tanzania) and clothing (to SSA).

One of the principal constraints on new market penetration was the inadequacy of quality controls in Zambia, as well as the non-application of international norms. Up to the mid-1980s, only 30 national standards existed in Zambia in respect of all manufactures! Another major constraint which reduced Zambia's geographic exporting range, was the unreliability of surface transport --either along the long railroad to the perennially congested port of Dar es Salaam, or by truck and rail to Mozambiquan ports. Pilferage was high and delays made delivery schedules outside the SSA area hypothetical.

No new import-substituting activities of any size accompanied the rise in manufacturing output, and not for want of opportunities! The more obvious ones were cottonseed and sunflower seed crushing and refining, rock salt mining and processing, the manufacture of toothpaste and petroleum jelly to replace purely repackaging operations.

The dollar value of total Zambian exports continued to drop, since the slight shifts in the commodity structure were outweighed by the slump in copper earnings. The country's cost structure tended to rise. Between the start of liberalisation and 1985 the wholesale price index of all non-copper products rose by almost ninety per cent, which put an additional drag on the achievement of export competitiveness. It is indeed surprising that, under the conditions then obtaining, any export diversification took place at all!

Inflation was high and raised the cost of living of low-income households by 94% in the same period. Yet no major social upheavals took place, attesting to the resilience of Zambia's social fabric and to the stoic manner in which both the urban population and organised labour responded, under the country's political leadership, to growing economic hardship.

1985 brought in its wake more market-inspired measures. Interest rates were raised to yield positive returns to savers, a foreign exchange auction was installed, while import licensing along with quota restrictions were abolished. The customs tariff was made more uniform and protection levels reduced for import-intensive products with low value added. The average rates of nominal tariffs (in the 30-40% range) became moderate by SSA standards and the whole subject of protection and competitiveness was thrown open to public debate in all centres of Zambia, at hearings of a Tariff Commission of Enquiry.

The Commission's recommendations, which the hearings generated, were indicative of the problems faced by the manufacturing sector. There was consensus in respect of an array of policy measures, for instance in relation to the need to maintain the 50% foreign exchange retention allowance for non-traditional exports as well as the no forex involved facility, with only a small licence fee: - provide small industries with credit on preferential terms; - raise duties on potentially competing manufactures; - have nil tariffs on raw materials not locally available; - broaden the buy local campaign; - give a 15% preferential margin to local contractors in Government tenders and use aid money to purchase local goods and services when available; - discourage aid-tying and barter transactions; - prolong the protection enjoyed by all ailing industries but if corrective measures proved ineffective, to liquidate them; - have foreign holders of pipeline debt swap it for equity in Zambian joint ventures (sic) and establish an exchange rate guarantee scheme for non-traditional exports.

In relation to ancillary measures there was agreement:

- to maintain price decontrol and the exchange auction system in its Dutch version¹⁶ with the bids publicized;
- make profit incentives more uniform between sectors, and
- encourage local manufacturers to contribute to a more effective Bureau of Standards.

The above desiderata reflected the preponderant views of the private manufacturing sector and, as such, point to the chief handicaps faced by it in the mid-eighties.

Thus, the general assessment of the auction system and accompanying market-oriented measures by the vocal part of the private sector, was positive. It left less room for corruption or favouritism. Capacity improvement became possible in plants whose owners found the wherewithal to acquire the expensive foreign currency. But small enterprise and farmers were left at a distinct disadvantage in the scramble for foreign currency¹⁷.

6.2 The Parastatals and the Reforms

What of the parastatals and their reactions to the reforms?
What were the effects on their profitability?

It will be recalled that parastatals have been accounting for about two-thirds of total industrial employment and value added. The annual reports of parastatal holding companies give a positive evaluation of the effects of the liberalisation of trade and payments, the decontrol of prices and of interest rates, as well as of the auctioning of dollars, on their operations during 1986.

Thus ZIMCO, accounting for 35% of formal employment and 55% of GNP in 1985, reported that:

- even the less import-dependent firms succeeded in getting enough foreign exchange through the auction to satisfy their immediate import requirements so that companies were able to by-pass the more expensive lines of supplier credit;
- more attention was paid to economies in production because of the high kwacha cost of foreign exchange;
- marketing and competitiveness in foreign markets attracted more attention;
- higher capacity utilization was achieved by most, but not all, ZIMCO enterprises, allowing some improvements in labour and capital productivity.

Two major problems were common to most parastatals: a) with the rapid devaluation the burden of external indebtedness doubled and the larger inflow of competing goods from abroad caused problems of disposal on the domestic market. Shortages of working capital, due to the accumulation of losses in the past, were widespread. In 1985/6 out of 37 INDECO companies, in only 20 was net working capital positive. This burden was not relieved by the reforms. Bank overdrafts for bidding at auctions were restricted so that indebted enterprises had difficulty in being successful.

INDECO, for its part, ascribed the increase in non-traditional exports during 1985-86 by its subsidiary companies directly to the reforms. They were optimistic about being able to add new products to their exports if conditions were to remain unchanged. These included industrial fabrics, glass bottles, bicycles, galvanized hollowware, wheelbarrows, edible oils, detergents and canned pineapples. But the only new import-substituting activity that came on-stream during the 1985-86 period was the extraction of cooking oil from domestic oilseeds. And total manufacturing employment did not rise significantly above its 1984 level of 48,000.

Observers generally agree that not enough foreign exchange was made available at the auctions to ensure success. By the middle of 1986 the unsatisfied demand for dollars amounted to US\$ 24 million per month and towards the end of that year almost to US\$ 68 million. Local money supply expanded disproportionately to the availability of foreign exchange, which fell from a high of US\$ 9 million a week to 5.6 million after the IMF suspended disbursements in reprisal for the

accumulation of arrears by Zambia and because of reticence on the part of the main supporters of the auction (US, UK, Sweden) to make up the difference. Thus after the deduction of vital sums for petroleum, air transport and General Government, the balance of foreign exchange available for other imports did not exceed US\$ 4.4 million and, in early 1987, shrank to a mere \$2.8 million. With the increase in money supply, prices of imports went up, raising the already high import content of goods and generating a vicious spiral¹⁸.

It is tempting to think that the Zambian authorities would have continued their experiment with the free float of the kwacha against the dollar had enough foreign exchange been made available to absorb excess liquidity. Was the IMF injudicious in withdrawing its financial support at a crucial juncture, or was the liberalisation experiment started too late and was too difficult for a socialist government to digest? Why was the income effect of massive devaluation not cushioned by employment-generating programmes, easier credit to farmers and small industry? Would sectoral pre-allocations of foreign exchange have helped? These and other pertinent questions will be considered in the second phase of this project.

This section concludes with a discussion of one important aspect of the reform measures which is irreversible and should at least prevent the saddling of the State-controlled sector with unprofitable activities (white elephants).

Over the past five years ZIMCO recorded pre-tax profits in only three, so that overall parastatal performance has not been very satisfactory. Although this is mainly ascribable to the poor performance of mining enterprises, there were a number of loss-makers in manufacturing proper. They included firms producing batteries and parts, food canning and pork products, saw-milling, ceramics and clay products, nitrogenous fertilizers and industrial acid. Had company assets been valued at replacement rather than historic cost, ZIMCO's outturn would have been much worse.

Cost and product accounting was introduced by ZIMCO quite early in the reform period and was followed by the imposition on all the parastatals of uniform quarterly reports based on an exhaustive financial manual aimed at capturing all of the data essential for exercising efficient control. The result has been telling. Company books could be closed just two months after the end of the 1985/6 financial year. As soon as all the manufacturing enterprises become computerized, they will be required to submit to ZIMCO via INDECO for vetting-- on a monthly basis-- balance sheets, profit and loss statements, value added, sources and uses of funds, financial ratios, capital expenditure and foreign exchange transactions. Still tighter financial reins will be placed on the less profitable companies. Such data and analyses of company performance should make corporate budgeting and planning feasible and allow the Party and Government leadership to exercise both ex ante and ex post controls.

Within the INDECO holding of 37 manufacturing and service

enterprises, of the nine that were loss-makers in 1982/3, three have achieved a turnaround by 1986 and one heavy loser -- the nitrogenous fertilizer plant -- sold to a consortium which had received assurance of multinational assistance for rehabilitating the plant. INDECO's return on capital has risen to 13% from 9% in 1982/3 but overall operations have yet to yield net foreign exchange earnings.

The reasons for the lack of profitability in parastatal manufacturing are historical and due to many having been badly planned, located and equipped. Prior to 1975 company Boards were too directly under the influence of politicians and were obliged to operate as quasi-social instruments. For instance, the fertilizer plant was the second in the whole world to use an expensive and delicate electrolytic reduction process based on coal; i.e. it has had to become the object of radical rehabilitation with World Bank participation. The over-sized design of the brick plant is traceable to a poor feasibility study which over-estimated demand and concluded in favour of a capital-intensive plant capable of producing 35 million high quality bricks annually, but which are not competitive with less sophisticated products preferred by consumers in and around Zambia. The motor cars assembled at a major plant cost, on average, US\$ 2000 more than the border prices, so that throughput has seldom exceeded 100 cars per annum. The tyre manufacturing company was originally sanctioned on the explicit understanding that latex would be produced locally, but 15 years later, continued to import its raw rubber. Situations such as these need not recur as there is presently enough expertise in INDECO to monitor activities closely and to carry out the studies on which to base sound economic decisions.

As to the immediate future of the manufacturing sector in Zambia, there are several economically valid ventures at an advanced stage of consideration. They include the manufacture of:

- insecticides and pesticides (provided the active ingredients can be produced locally);
- hardwood forest products for export;
- irrigation equipment;
- tanned leather and shoes;
- brass/bronze appliances;
- magnesium-fused phosphate fertilizer;
- electrical motors and transformers;
- glycerine from soap by-products;
- oversize tyres for earth-moving equipment;
- animal stock-feed.

Many of these ventures can generate new linkages and their products could become competitive in foreign markets if plant design and location are appropriate.

But after the return to administrative controls and regulations as of May 1987, can INDECO's momentum be maintained? Since the composition of aid donors may change, will the procurement of capital equipment conform to the companies' real needs and factor costs? Under the revived system of government management, can administrative

costs and overheads be lowered to help make Zambian products more competitive?

At the time of writing, Zambia's New Economic Recovery Programme of May 1987 had yet to be filled out with a realistic financial forecast demonstrating the feasibility of maintaining internal and external equilibria with, hopefully, some growth. All of the country's aid partners were being canvassed for support, but it is doubtful that the former real volume of aid will be maintained, if only for reasons of market theology on the part of some.

What about the export outlook, particularly of manufactures? The new 100% surrender requirement of all export earnings to the central bank -- instead of the 50% in force before the break with the IMF -- raised an immediate outcry among exporters who had recently gained precarious footholds in foreign markets with so-called non-traditional exports (all but metal minerals). Several of them claimed that the revalued kwacha made them uncompetitive abroad and called for it to be 50% lower. Was this the harbinger of the re-installation of the two-tier system, abandoned at the turn of the decade after a trial run?

With interest rates fixed under the new system of controls at 15% plus a 5% margin -- as a maximum -- domestic savings will be largely determined by price and wage levels. Incomes have already reached all-time lows in Zambia and domestic investment will depend crucially on the inflow of net foreign savings. The volume of concessionary aid will at best stagnate and the level of the country's indebtedness is such as to discourage commercial long-term loans of any consequence. Hence Zambia must pin its hopes on attracting direct foreign investment in all its forms, including possible debt/equity swaps arranged with the creditors. The 1986 Investment Act provides generous and well-balanced incentives and guarantees. The country's financial infrastructure has been bolstered by the Lima Agricultural Bank, the credit guarantee facility for small industry in the Development Bank of Zambia, and by the embryonic Export Import Bank. They deserve the support of the international community in their task of diversifying output and raising the economy onto a sustainable development path.

ANNEXES

ANNEX 1 STATISTICAL DATA

Annex Table 1.
Basic Data on the Zambian Economy

National Accounts	1979	1981	1983	1985
GDP in 1980 kwacha (millions)	2973	3253	3099	3070
GDP p.c. growth (%)		-0.3	-5.5	-3.3
Shares in GDP: (%)				
Govt. consumption	23	28	24	19
Priv. consumption	50	65	63	62
Gross fixed cap.form.	17	18	15	10
Change in stocks	3	2	0	2
Exports - Imports	8	-13	-1	7
GDP growth (%)	1970-1980	1980-1983		
(US dollar base)	-----	-----		
TOTAL GDP	1.1	1.4		
of which: manufact.	2.3	4.2		
mining etc	-1.4	5.5		
construc.	-1.3	-16.4		
publ.utilit.	17.0	4.7		
Total Industry	0.4	3.3		
Sectoral Investment	1972	(only year with relevant data)		
(% of GFCF)	----			
Commercial agriculture	4.6			
Mining & Quarrying	32.8			
Manufacturing	12.5			
Transp. & Communic.	10.0			
Construction	2.9			
Services	37.3			
MVA Growth	1970 - 80	1980 - 83		
(1970 kwacha base)	-----	-----		
TOTAL manufacturing	2.3	4.2		
of which:				
Food Beverages & Tobacco	1.6	5.9		
Textiles & Apparel	9.3	5.6		
Wood & products	-2.0	-6.4		
Paper, printing, publish.	-3.4	16.2		
Chemicals, plastic, rubber	9.5	-4.8		
Non-metal mineral prod.	-0.7	13.8		
Basic & fabric.metal prod.	0.6	-5.0		

Exchange rate	1979	1981	1983	1985
(SDR per kwacha)	.98	.98	.78	.16

International Transactions 1970-75 1975-80 1980-82
US dollar based growth rates of:

TOTAL Exports	-4.4	9.6	-12.0
of which: Copper	-5.3	8.2	-9.2
Zinc	14.6	-5.0	4.0
Lead	5.1	-1.6	-5.8
Cobalt	4.5	46.2	-46.6
Tobacco	12.9	-16.6	negative

	1970-75	1975-81
TOTAL Imports	13.3	2.2
of which:		
Min.fuel& elec.	18.8	10.2
Food	5.3	0.8
Crude material	14.7	0.2
Chemicals	23.9	3.1
Manufactures	14.7	-1.5
Other manuf.	0.8	-4.5
Machin.& equip.	11.5	1.6

Employment (000)	Dec. 1972	Dec. 1980
TOTAL	367.9	379.4
of which in:		
Manufacturing	43.3	47.8
Mining & Quarrying	60.7	63.1
Construction	72.3	43.8
Public utilities	4.5	8.0
Agric. & Forestry	31.1	32.6
All other sectors	156.0	184.1

Industry Structure in 1980

percentage shares in	<u>Employment</u>	<u>GDP</u>
Private firms	45.6	43.6
Parastatals	43.4	49.5
Publically owned enterpr.	11.0	6.9

Prices and Production (indexes 1980=100)	1979	1981	1983	1985
Consumer prices	90	114	153	253
Industrial production	97	98	97	106
Mining output	97	92	95	80
Interest Rate				
Discount rate	6.5	7.5	10.0	25.0

Source: UNIDO and World Bank.

Annex Table 2

Non-service sectors in the 1975 Input-Output table

Sector Number	Definition
-----	-----
1	Agriculture, forestry and fishing
2	Metal mining
3	Quarrying
4	Food manufacturing
5	Beverages & Tobacco
6	Textiles and wearing apparel
7	Wood & wood products
8	Paper & printing etc.
9	Chemicals
10	Rubber products
11	Non-metallic mineral products
12	Basic metal products
13	Fabricated metal products
14	Other manufacturing
(15-29	All services)

Annex 3

Abstract of the Case Study of Mansa Batteries Ltd¹

The firm was selected as typifying the outcome of import substitution in Zambia during the 1970s. Its principal characteristics included the following:

- consumer-oriented with few possibilities for diversifying its product mix;
- relatively capital intensive and utilising complex and costly machinery;
- sited in a non-industrial environment, lacking commercial and commercial and physical infrastructure;
- designed for output volumes well in excess of the needs of the domestic market;
- dependent on the importation of the greater part of inputs and on the use of foreign managerial and technical knowhow;
- not price-competitive & requiring protection from imported products;

The plant was inaugurated in 1978 as a joint venture with a large Finnish firm (Oy Airam Ab) that enjoyed its Government's patronage and INDECO, holding two-thirds of the company's shares, valued at KO.9 million. The project had been conceived in the early 1970s but site preparation took two years longer than anticipated largely because of its sub-optimal location - close to local deposits of manganese ore used as an input, but in a rural environment with poor communications with the country's main commercial and industrial centres.

The installed capacity (44 million flashlight batteries) was more than double the peak level of such imports in the 1973 to 1977 period and about four times the average level of similar imports. The responsibility for project planning, procurement of equipment and machinery, installation, commissioning, maintenance, management and training lay with the Finnish partner in the project.

It took but 18 months for the plant's operation to become seriously disrupted by defective equipment, inadequate technical supervision and, more crucially, the shortage of foreign exchange to purchase adequate supplies of raw materials and spare parts. This constraint was eased by additional Finnish assistance but also led to the divestment by the foreign partner of its shares in 1982.

Capacity utilisation during the 1978 to 1983 period (averaging 20%) never exceeded 29%. Employment levels varied between 200 and

¹. From, K. Rajeswaran, TECO Research Project Publication No. 7, The Institute of Development Studies (Sussex) and the University of Helsinki, April 1986.

250 persons. Downtime averaged 16,000 man-hours per annum in the period 1981/82 to 1984/85, four-fifths (equally) due to machine breakdowns and to shortages of various inputs. Because of these constraints, labour productivity declined after 1982. Additionally, no batteries were exported. The Kwacha cost of inputs almost quadrupled between 1979 and 1983. The higher costs of production could not be passed on fully to final consumers, thus reducing the firm's profit margins. Foreign exchange allocations to the firm by the Bank of Zambia covered, on average, only one quarter of the firm's requirements, obliging it to rely ever more on expensive supplier credit. By 1984/85, its long term debt amounted to K7.3 million.

NOTES

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FOOTNOTES

1. During the first 20 years of independence Zambia had fixed exchange rates: until 1970 the kwacha was pegged to the pound sterling, then 1970-76 to the US dollar, during 1976-83 to the SDR, and from July 1983 to October 1985 to a basket of trade-weighted currencies. In the course of adjustments following 1974, three discreet devaluations were carried out: in 1976 by 20%, by 10% more in 1978 and by a further 20% in 1983. These proved inadequate to diversify and promote the country's exports so as to offset the continuing fall in metal-related foreign exchange earnings. Reserves were repeatedly drawn down to the value of a few weeks' imports as the government persisted in relying on incomes and exchange controls to contain imports, to insulate the kwacha from supply and demand pressures, and to borrow its way out of what was thought to be a passing depression.

It eschewed a substantial once-off depreciation for several likely reasons:

- the difficulty of deciding on the adequacy of a large devaluation in terms of its net balance of payments effect;
- the unpalatability of admitting itself unable to sustain the value of the national currency and of inviting inflation from abroad via higher prices of imported goods and services on which so many activities were highly dependent;
- the perceived unreliability of a positive supply response by producers of exportable products, given the run-down state of their capital assets and other supply constraints;
- the continued preoccupation with supporting the purchasing power of urban dwellers to the neglect of internal terms of trade.

For detailed discussions see P.Daniel, Structural Adjustment or Downward Spiral, IDS Bulletin 1985; C.Harvey, Non-marginal Price Changes etc., paper submitted to the EAZ Conference, Lusaka, June 1987; C.Lancaster and J.Williamson (Eds), African Debt and Financing, ch.3.

2. ILO's JASPA report on Zambia (1981) estimated at 20% the deterioration in both the barter and the income domestic terms of trade between 1969 and 1980.

3. The performance of a Zambian firm manufacturing flashlight batteries epitomizes the problems endemic to industrial growth in the 1975 to 1985 period. See Annex 2 for a summary of the case-study of the firm by K. Rajeswaran under a joint research project of the Institute of Development Studies (Sussex) and the University of Helsinki. TECO Publication, No. 7, April 1986.

4. Examples cited by Makgetla (ibid) are: first, the expansion of polyester fabric manufacturing with a high import content, in preference to more intensive use of domestic cotton and, secondly, the costly investment in automated wrapping by the state-controlled bakeries to make them stand up to competition from artisanal bread makers. For a full discussion of the structure of ownership in the manufacturing (and mining) sectors see O.A. Saasa, Zambia's Policies Towards Foreign Investment, Research Report No. 79, Scandinavian

Institute of African Studies, Uppsala, 1987.

5. The first White Paper entitled Outline of the Government's Industrial Policy was published by the Government Printer in October 1964. It was revised by the Ministry of Commerce and Industry in January 1966.

6. World Bank, Industrialization in Sub-Saharan Africa, 1984, p.49.

7. In Zambia data on capacity utilization in manufacturing are very patchy. For the early period, World Bank analysts derived their branch estimates from small samples of individual enterprises, most of which were State controlled. More recently the INDECO group of parastatals have begun to include capacity use in their annual reports. UNIDO has listed this information for the years 1981-82 in its Industrial Development Review series, IS/520, Feb.1985.

8. World Bank, op.cit., table 15 .

9. V.Sheshamani and J.K.Hasan, Key sectors in the Zambian Economy etc, Business & Economic Studies Dept., 1984.

10. UNIDO, Statistical Review of Economic and Industrial Performance, 1987/01/21.

11. The rate of import substitution was derived by the application of the formula $(U_2 - U_1) / Q_2 - Q_1 /$ in which $U_1 = Q_1 / S_1$, $U_2 = Q_2 / S_2$, Q = domestic output, M = imports and $S = Q + M$ = total supply.

12. As the computation of DRCs requires access to enterprise accounts and firm knowledge or border prices (a particularly complex problem for landlocked countries!), the World Bank's calculations of DRCs is, so far, the only known attempt to work out these numbers for Zambia, dating back to 1981. As all practical economists know, the major uncertainties in calculating DRCs derive from the difficulty of arriving at so-called free trade and shadow prices. In the SSA countries' context, the use of proxies and approximations is the rule, plus abstraction from usually significant differences in quality between domestic and competing imports. Also there are practical difficulties of valuing non-tradeable inputs, regarding which opinion differs. But the initial stumbling block is the poor quality of accounting data regarding intermediate consumption by the sampled enterprises, a matter we will comment upon below.

Firms with the lowest DRCs are the most efficient at transforming domestic resources into foreign exchange. The high DRC values result from low levels of value added (at international prices) which, in terms of Zambian patterns already discussed, would apply either to the firms receiving high tariffs and import-licensing protection yet consuming large quantities of imported inputs entering

at low rates of duty, or to generally inefficient enterprises, using vast quantities of domestic resources per unit of their value added (at free trade prices).

13. Prior to 1975, several Industry Monographs were published but their coverage (80%) of the manufacturing sector stopped short of analysing a few small but dynamic subsectors (base and fabricated metal products, electrical machinery and "other" manufacturing). Because of the nature of enterprise accounts, the studies could not separate out imported and domestic inputs in intermediate consumption of the firms.

14. V. Sheshamani and J.K. Hasan, "Key Aspects in the Zambian Economy: An Attempt At Empirical Investigation", paper of the Business and Economic Studies Department, University of Zambia, August 1984.

15. See various articles by J. Diamond in the Oxford Bulletin of Economics, Vol. 29, No.2; Applied Economics, Vol. 7, No. 4, and Kyklos, Vol. 29, No. 4. See also B.R. Hazari's articles in the Review of Economics and Statistics, Vol. 52, No. 3, 1970 and G.J.D. Hewings, ' article in The Developing Economies, Vol. XX, No. 2, 1982.

16. In the Dutch variant of the foreign exchange auction the bidders have to pay the actual rates they offer, rather than the struck rate at which transactions are subsequently made.

17. For details see Conference Proceedings (Lusaka, June 29-July 3, 1987) The auctioning of Foreign Exchange, organized by the Economics Association of Zambia.

18. c.f. Murray Sanderson, Why Zambia's Auction Failed. Paper submitted to the EAZ conference, Lusaka, July 1987. In it he points out that the primary impulse behind the growth in money supply was Central Government borrowing, largely to meet its debt servicing obligations.