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Secretariat for Analysis of
Swedish Development Assistance

The Macroeconomic Impact of Aid in Zambia

Howard White, Tove Edstrand
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SASDA

The Secretariat for Analysis of Swedish Development Assistance

The Swedish government has appointed a committee with the task of analysing the results and effectiveness of Swedish development aid. A special Secretariat, SASDA, was set up on 1 March 1993 to carry out the work.

The Secretariat will work until the end of 1994 and will have as its main task to propose to Government suitable mechanisms for evaluations and policy analyses of Swedish aid. In its work SASDA will give priority to carrying out a set of of selected studies world-wide, at country, sector and subject level and to studies of individual organisations to provide a basis for decisions on development co-operation in the future and to gain experience on how policy evaluations should be carried out. A major study concerns Sweden's co-operation with Central and Eastern Europe.

SASDA's point of departure is the aim of a better understanding of the mechanisms of development in order to enhance the results and increase the effectiveness of aid in achieving the five goals set by the Swedish parliament: increased resources, economic and social equality, economic and political independence, the democratic development of society, and the long-term management of natural resources and care of the environment.

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THE MACROECONOMIC IMPACT OF AID IN ZAMBIA

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PREFACE

This report is one of three country reports being prepared for the SASDA/SAU sponsored study on the macroeconomic effects of aid in the recipient countries. The other reports analyse the situation in Guinea-Bissau and Nicaragua. A fourth report presents summaries of these country reports (and an additional chapter on Tanzania), and a comparative synthesis of the experience of the different countries.

In the first instance we would like to thank the staff at SASDA/SAU for inviting us to participate in this study. Specifically, we thank Enrique Ganuza for his assistance in undertaking various aspects of the work. Many people in Zambia provided useful help and assistance - most notably Caroline Nyimba, who contributed far more than her title of research assistance allows for, and Carolyn Yetman at SIDA. We have also received useful cooperation from Christine Gamstorp from SIDA in Stockholm. Any errors and omissions are of course our own.

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EXECUTIVE SUMMARY

1. Since independence in 1964, the Zambian economy has experienced severe economic decline. The decline is both absolute - Zambians are on average much worse off today than they were thirty years ago - and relative - other countries have not done so badly. Real per GDP per person in the early 1990s was about two-thirds that in the late 1960s. Living standards, as shown by consumption levels and welfare indicators, have also fallen. Infant mortality rates and life expectancy rates are comparable to their levels at independence, having improved in the first fifteen years and deteriorated thereafter. Yet Zambia has been a favoured recipient of aid, particularly in the 1980s. Over the period 1980-93 it has received as estimated US$ 8.5 billion. Why has aid not helped to prevent economic decline? This report examines aid's role in Zambia's poor performance from a macroeconomic perspective.

2. Macroeconomic policy at independence in Zambia was determined by the desire to redress imbalances in income distribution between black and white and to spread the benefits of the copper wealth amongst the population. The role of the state expanded as the civil service mushroomed; this role was reinforced by the Mulungushi and Matero reforms which expanded the state's role in the productive sectors. Many of these bold plans were based on the presumption of continuing high revenues from the copper sector - but Zambia suffered substantial declines in the terms of trade from the mid-seventies, from which there has been no subsequent recovery. Hence, what may be seen as an initially brave attempt to wrest control of

the country's development for the benefit of its people, turned into a costly failure, as the state machinery blundered into inefficiency and corruption.

3. Zambia's plight may be characterised as one of Dutch disease. Responses to a boom are not readily reversible once the boom is over - typically, as in the Zambian case, scaling down the public sector and the support it provides to living standards. The failure of GRZ to tackle this problem when it first arose - and the support they received from donors - has made the challenge of adjustment far more difficult, as structural problems have been compounded by years of mis-guided policies and half-hearted reform. The structure of Zambia's economy - with its large manufacturing and urban sectors - remains wholly inappropriate for a country with Zambia's resource endowments and level of development.

4. At the start of the 1990s Zambia's total external debt exceeded US$ 7 billion - that is about $ 800 per person (over twice the average per capita income). In the early 1970s the majority of Zambia's debt was from private sources, but now over 90 per cent is from official creditors, just under half of the total being from the IFIs. Aid to Zambia has peaked three times. There was growing support up to 1980 as the crisis deepened, but this support fell away given the government's reluctance to embark on an adjustment programme. Aid grew from 1985-87 but fell again when the new programme was abandoned (or levelled off, according to which source is consulted). High levels of aid have been enjoyed since 1990. A high proportion of aid to Zambia has been balance of payments support: both import support and debt relief.

5. Despite generous debt relief and settlement of arrears there has been little reduction in total external debt:

nor can rapid reduction be expected given the size of the problem and the effective rescheduling of IMF funds through the RAP. GRZ's own optimistic projections show that the current account (excluding official transfers and interest payments) will remain in deficit - that is, Zambia's export earnings will be insufficient to meet her own recurrent requirements. Debt obligations therefore have to be paid for by capital inflows: external finance of the order of US $600 to 700 million a year is needed to meet debt obligations for the foreseeable future.

6. The conventional macroeconomic role ascribed to aid - to supplement savings and export earnings to increase investment and imports - does not apply in Zambia. Zambian domestic savings have equalled or exceeded investment in most years, and the country has enjoyed a positive trade balance in most years (although the current account is in deficit this fact is in large part ascribable to interest payments). Furthermore, decomposition analysis of the sources of changes in imports and investment do not find a large role for aid.

7. Import levels have largely followed the capacity to import given by export volumes and the terms of trade. In the 1980s large debt obligations have also detracted from the forex available for imports - and, simultaneously, reduced resources available for investment. The aid monies themselves have largely been used to meet these debt obligations.

8. During the two adjustment episodes (1985-87 and since 1990) a large proportion of aid has been balance of payments support - debt relief or import support. We argue that debt relief has provided a measure of free forex to GRZ and played a stimulative role through conditionality. The specific arguments against import support - such as being used for luxury goods and the

inflationary impact of counterpart funds - do not seem to have been a problem in Zambia.

9. The presumed beneficial impact of aid-supported policies provide an important complement to the macroeconomic effects of the aid monies. Econometric estimation suggests that aid has an inflationary impact - but the pressure this creates for appreciation of the real exchange rate is more than offset by the nominal devaluations carried out as a part of the adjustment programme.

10. Since much of the aid has not flowed into the Zambian economy in the current period, and since that which has has largely not been directed to social sectors, aid in Zambia has played little role in preventing the stagnation in social indicators. This fact should be of concern to donors.

11. Whilst little can be said about the social impact of aid, nothing can be said about aid, development and environmental issues. There are plans at present to undertake CGE analysis of environmental issues in Zambia, which will hopefully answer some of these concerns.

12. A model is presented for a formal analysis of aid impact. In the model an economy's output may be constrained in any of five ways: (i) demand; (ii) domestic savings; (iii) fiscal constraint; (iv) shortage of capital imports; or (v) shortage of intermediate imports. Aid may alleviate each of these gaps - though the extent to which it does so depends on the type of aid. The functional classification of aid identifies three types: debt relief, import support and project aid. The first two of these may exacerbate the demand constraint, as aid financed goods displace domestic demand with no

offsetting stimulative effect on absorption.

13. The analysis of the Zambian economy shows that aid is not currently required to finance new investment. The existing capital stock is set to remain under utilised for some years to come, so that the priority for aid is rehabilitation and the provision of parts required to utilise existing capacity. However, the demand displacement effects of programme aid must also be taken as a serious potential threat.

14. The prospects for growth in Zambia are not promising, despite the very large amounts of aid required. But if the aid were not to be forthcoming then Zambia would plunge further into crisis and living standards continue to fall.

15. The Zambian economy enjoys high aid inflows. Per capita aid receipts are about three times higher than the average for sub-Saharan Africa. But the role of aid in Zambia has not been to complement imports and investment. Its main role has been to meet debt service obligations and provide leverage for donor conditionality. It is the sheer size of the debt problem which necessitates the high levels of inflows. Whether the scale of the inflows can be justified given the opportunity cost of not giving aid to other recipients is ultimately a political question. However, if aid is not forthcoming Zambian prospects are dire indeed.

CHAPTER 1

INTRODUCTION: ZAMBIA'S ECONOMIC DECLINE

Since independence in 1964, the Zambian economy has experienced severe economic decline. The decline is both absolute - Zambians are on average much worse off today than they were thirty years ago - and relative - other countries have not done so badly. Real per GDP per person in the early 1990s was about two-thirds that in the late 1960s: in 1993 GDP per capita was (in constant 1977 prices) an estimated K 245 per person, compared to K 409 in 1965 - equivalent to an annual decline of 1.8 per cent (Table 1.1).[1]

Living standards, as shown by consumption levels and welfare indicators, have also fallen. Both per capita total and private consumption have fallen to around three quarters of their value at independence: falling by 1.3 and 1.5 per cent a year respectively over the period 1965-93. Infant mortality rates and life expectancy rates are comparable to their levels at independence, having improved in the first fifteen years and deteriorated thereafter. In recent years the proportion of households below the poverty line has increased markedly (from one half in 1980 to two thirds in 1991).

As a result of these trends, countries which had income comparable to that of Zambia in 1970 (e.g. Cote d'Ivoire and Ghana) are now several times richer (Table 1.2); Zambia is now keeping company with countries which were relatively far worse off thirty years ago (such as Botswana and Mauritius). Comparison with Asian countries shows even a worse relative performance - the GDP of the Philippines was under four times that of Zambia in 1970, but over 14 times greater in 1990. Why has the Zambian economy performed so badly?

Table 1.1 Zambian socio-economic indicators

	1965	1970	1975	1980	1985	1991
Real GDP per capita	409	410	396	359	304	260
Real consumption per capita	283	318	333	294	252	201
Private consumption per capita	237	230	224	199	184	150
Percentage of households below the poverty line	n.a.	n.a.	33.9	49.0	n.a.	67.4
Infant mortality rate	n.a.	106	96	97	107	107
Life expectancy	n.a.	46	49	50	52	49
Child malnutrition	n.a.	24[1]	20	6	14	23

Note: [1]1972

Source: CSO *Monthly Digest of Statistics* (various), *World Tables* and GRZ (1994: 1).

Table 1.2 Comparisons of absolute GDP (Current US$ billions)

	1970	1980	1990
Botswana	0.8	9.7	31.3
Cote d'Ivoire	14.5	105.1	99.4
Ghana	22.1	155.8	58.3
Korea, Rep. of	88.9	626.3	2,440.4
Malawi	2.9	12.4	18.6
Mauritius	2.2	11.3	25.4
Philippines	66.9	324.5	441.9
Zambia	17.9	38.8	31.2

Source: *World Tables diskette* (conversion to dollars using average conversion factor). For a similar table see McPherson (1994).

There are two opposing views on the causes of economic crisis in Africa. According to one view the continent has been beset by adverse circumstances - the colonial heritage, dependence on primary commodity production, adverse movements in the terms of trade, protectionist policies in developed countries and a growing debt burden - which have impeded growth. The policy conclusions drawn from this analysis, most clearly articulated in the OAU's Lagos Plan of Action (1980), have been to reduce external dependence through fostering regional cooperation and promoting national and regional import substitution.

These policies have accorded the state a substantial role in the development process, directing the allocation of resources in accordance with the perceived long-term development interests of the country. The alternative view - clearly stated the World Bank's "Berg Report" (1981) - is that it is precisely these policies which are to blame for the continent's poor economic performance. Hence, according to this view, different (market-oriented) policies should be put in place.

During the 1980s these two views have merged, with each side accepting that there is some validity in the other's point of view.[2] Zambia is a good illustration for these arguments - from colonial times, the economy has been heavily dependent on copper, whose price collapsed in the mid-seventies: a collapse from which the economy has never really recovered. But is the change in the copper price to blame for Zambia's malaise? Or is it the regime of controls which was adopted really to blame, as it prevented successful diversification of economic activity into other areas? Both of these views are present in analyses of the Zambian situation. Clark and Allison (1989) trace the roots of Zambia's problems to the countries dependence on copper - they are critical of the adjustment programme supported by the World Bank and IMF, but nowhere discuss the possible inappropriateness of policies prior to adjustment. On the other hand, Gulhati (1989) stresses that poor policies have been a major factor in poor performance.

As might be expected, the truth probably lies in a combination of these two perspectives. The problems caused by inappropriate policies have been particularly severe in Zambia given the very large structural changes required given the need to reduce dependence on the copper sector. As described in Chapter 2 - which provides an overview of macroeconomic policy and performance in Zambia since independence - the newly elected government in the years following independence built up a government and state owned enterprise sector whose sustainability was dependent on continued high copper revenues. The collapse of the copper price in 1975 required substantial adjustment - but, believing the decline in the terms of trade to be a temporary phenomenon, the government not only failed to adjust but borrowed in an attempt to maintain consumption levels (whilst allowing investment to collapse). As Chapter 2 documents, since the early 1980s, the Zambian government has had an on-off relationship with adjustment - with the most sustained effort to date being that

by the MMD since coming to power in November 1991.

The borrowing undertaken in the second part of the 1970s, combined with declining purchasing power of export earnings, meant that Zambia was facing a very heavy debt burden by the early 1980s: in 1983 Zambia's total external debt as a per cent of GNP was 122.8, compared to 40.5 for all developing countries, 43.9 for sub-Saharan Africa as whole and 56.3 for all severely indebted countries (World Debt Tables, 1989-90). Chapter 3 outlines the growth and changing composition of Zambia's capital inflows (including the changing nature of aid) and debt stock - as well as projections of future debt service requirements.

Chapters 2 and 3 provide the background for the analysis in Chapter 4: the macroeconomic impact of aid. How has aid contributed to the country's economic development? Has it helped relax the country's foreign exchange constraint? Would the level and/or efficiency of investment have been higher in the absence of aid? The analysis is carried out by exploring the behaviour of the different components of the different macroeconomic accounting identities, considering the macro impacts of different types of aid and econometric estimation and, importantly, the impact of aid on policy. Chapter 5 provides a more formal model of aid's role in the Zambian economy, which allows for the differential effects between project aid, import support and debt relief.

Notes to chapter 1

1. The Zambian unit of currency, introduced in 1967, is the Kwacha.

2. Ravenhill (1988) discusses this merger of views.

CHAPTER 2

MACROECONOMIC POLICY AND PERFORMANCE IN ZAMBIA

2.1 Introduction

Since the mid-seventies real income in Zambia has fallen in a manner unparalleled in practically anywhere else in the world. The collapse in income can be clearly linked to the fall in copper revenue and the subsequent repercussions of that fall - in particular the tightening foreign exchange constraint. But, macroeconomic policies followed both prior to and after the fall in the copper price are also responsible for poor economic performance. Part 2.2 spells out this argument, starting with an overview of major macroeconomic trends, followed by a more detailed discussion of policy changes throughout the period since independence.

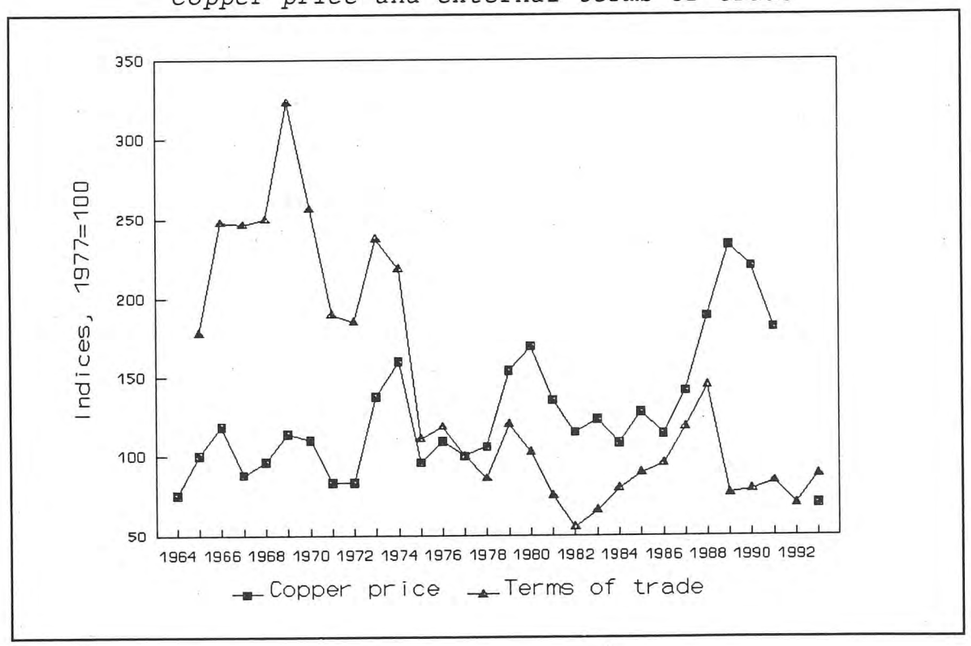
As shall be seen, the Zambian government's commitment to economic reform has been spasmodic. On several occasions stabilisation and adjustment programmes have been abandoned in mid-course. Moreover, there has been a great deal of slippage whilst programmes are being implemented. These facts raise questions about the commitment of the donor community to the adjustment process, as Zambia has enjoyed high aid inflows throughout the 1980s. Given the importance of policy reform in the link between aid and macroeconomic performance, part 2.3 gives more careful consideration to the role of donor agencies in supporting the policy reform process in Zambia. Part 2.4 concludes.

2.2 Macroeconomic trends

At independence copper and related mining activities accounted for 40 per cent of GDP; throughout the last thirty years copper

has accounted for more than 90 per cent of export earnings.[1] But the nominal price of copper is now the same as it was in 1964 (see Figure 2.1). In the interim, the copper price fluctuated until 1973/74, plummeting in 1975. After temporarily recovering in 1979-81 the price again fell back, rising again in the late 80s only to decline even more dramatically thereafter. Of course it is the relative price that matters. As might be expected, relative prices (very closely proxied by the external terms of trade, given the very high share of copper in total exports) have declined. This decline was very marked during the 1970s. There was some recovery in the middle of the decade, but this improvement was reversed - so that the terms of trade have been trendless during the 1980s.

Figure 2.1
Copper price and external terms of trade



The implication of the declining terms of trade can be seen from the behaviour of gross national income per capita, shown in Figure 2.2. Gross national income is the same as the gross national product at constant prices, except that exports are

deflated by the import price index (rather than the export price index - giving a "purchasing power" interpretation of real GNP). For the ten years following independence there was no overall trend in gross national income per capita (despite a surge in 1969). But in 1975 there was a dramatic decline, which has been followed by a more or less persistent downward trend. The continuing deterioration is not directly attributable to continued worsening of the terms of trade - which in fact have been trendless over the years 1975-1993 as a whole, but rather to the way in which the Zambian government adjusted to the shock.

Figure 2.2
Per capita GDP, income and consumption

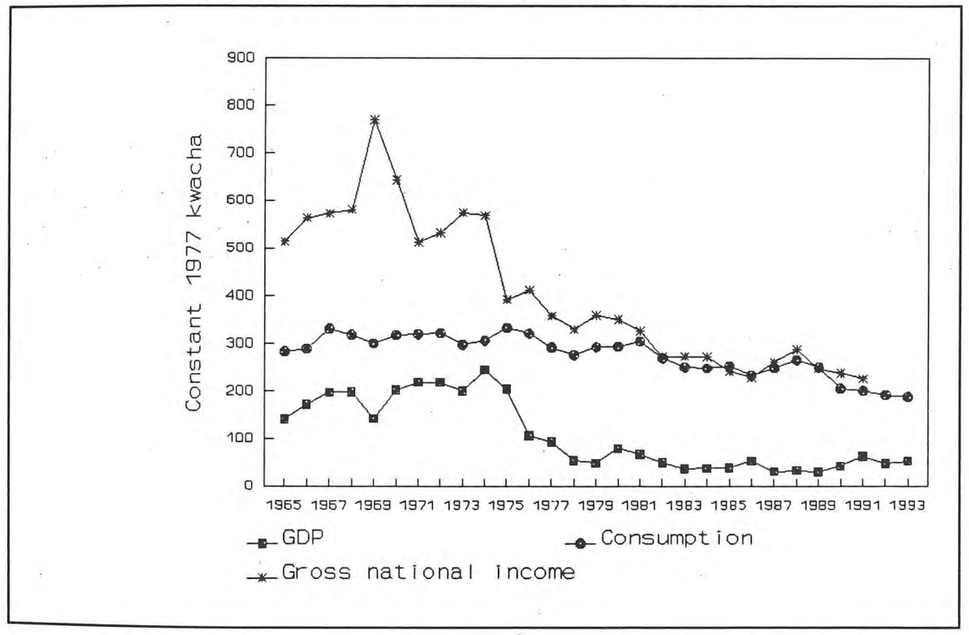


Figure 2.2 tells part of this story. In the post independence period the new government had endeavoured to spread the benefits of copper income more widely amongst the Zambian population - mainly through expansion of the government sector, as described below. The living standards Zambians enjoyed in the ten years following independence were predicated upon continued

high copper income - a source of income which in fact collapsed and has not recovered. However, the price fall in 1975 was initially seen as a temporary phenomenon. Hence the government moved to preserve living standards, despite the large reduction in income. This it did through implementing price controls and a system of consumer subsidies - the latter soon coming to claim a large share of the government budget. Throughout the late 1970s real consumption levels per capita were sustained, but only at the expense of: (i) the collapse of investment; and (ii) the build up of a substantial debt burden. By the early 1980s the it was no longer possible to continue maintaining living standards - but now adjustment had to take place with a tight foreign exchange constraint, imposed by a lower purchasing power of export earnings on the one hand and growing debt service obligations on the other. Meanwhile, the efficiency of investment in the state-owned sector (most of the formal sector, including mining) had fallen to appallingly low levels given years of soft budget constraints and the politicisation of parastatal management.[2]

The problem of the Zambian economy can therefore in large part be characterised as one of Dutch disease. When an economy experiences a resource boom its structure of production shifts against other sectors of the economy producing tradable goods. In the Zambian case, as elsewhere in sub-Saharan Africa, the sector to suffer is agriculture. Manufacturing does not suffer, as it may be expected to, since governments have typically used a part of the windfall to develop the sector. More generally, if some of the revenue from the resource boom accrues to government, another feature of Dutch disease may be a substantial expansion in state expenditures. These changes in the economic structure in the face of a resource boom are called a "disease" primarily because they are not readily reversible if the boom should come to an end. The boom in Zambia ended nearly twenty years ago, and the economy is still struggling to adjust to this fact.

In the following pages, these problems are described in more detail, as well as the successive attempts at reform in the 1980s and 90s. In Part 2.3 attention is focused on the role of donors in the adjustment process. Given the country's history a pertinent question must be whether generous aid flows have helped the country to <u>not</u> adjust, rather than the contrary.

Economic policy in the years following independence

The modern copper industry was developed in Zambia from the early years of this century, so that by the 1940s the colony was exporting large amounts of raw materials. However, the colony did not benefit much from the copper revenues - which were divided up between the European and settler owned mining companies, the British South Africa Company (BSAC, which ran the colony from 1899-1924), and the British government. For example, in 1936-37 the Northern Rhodesian (Zambian) government received only 12.5 per cent of the total amount paid in taxes and royalties (Burdette, 1988: 19). This drain of revenues from Zambia was exacerbated by the creation of the Federation of Rhodesia and Nyasaland in 1953, comprising Northern and Southern Rhodesia (Zambia and Zimbabwe) and Nyasaland (Malawi). The domination of the Federation by the settler interests in Southern Rhodesia meant that the bulk of the resources were diverted there; to the detriment of the social and economic development of the other two members: one estimate put the net loss to Northern Rhodesia from the Federation at £97 million by 1963 (Roberts, 1976; cited in Burdette, 1988: 26).

This situation changed with the break up of the Federation and the independence of Zambia in January 1964, under the new UNIP government. Both the payments to BSAC and the Federation government in Salisbury (Harare) now went to the Zambian government. In addition there was a rise in the copper price. Faber estimated the effect of these changes to be an increase in government revenue of K 170 million (compared to expenditure of less than K 60 million in 1963; Faber, 1971: 303).

These revenues were used in part for a rapid expansion of the government sector. The number of civil servants more than doubled between 1963/64 and 1967 (from 22,511 to 51,497; Burdette, 1988: 66). Africanisation of top-level positions meant that these rose even more rapidly - from 184 in 1962 to 573 in 1967 (Turok, 1979: 74). It is easy in retrospect to see such increases as a reckless spending spree. In fact the government made significant advances which must have improved living standards for many Zambians.

These advances came through the expansion of social sectors which was put of increased government spending and through policies to increase wages for Africans. Table 2.1 shows that provision of health facilities was rapidly expanded in the ten years following independence and that participation in education rose markedly (notably for adult education).

In 1966 the President supported striking mineworkers against the agreement made on their behalf by the miners' union - subsequently the Brown Commission made recommendations which substantially reduced wage differentials between African and non-African workers in the mining sector (the ratio of average wages of non-Africans to Africans falling from 16.1 in 1954 to 7.1 in 1966; Knight, 1971: 97).[3] Knight demonstrates that miners' wages had a "wage-leader" effect, so that the higher wages for miners were passed through the rest of the economy. The month after the report of the Brown Commission, the Whelan Commission recommended wage increases of a similar order for central government employees, and these increases were extended to local government (Knight, 1971: 100-101).

Initially the government was open to private foreign investment, and the regime may be described as one of a "mixed economy" - substantial private sector ownership, but with interventionist government policies to affect the level and distribution of income and to encourage import substitution. (See Table 2.2, which summarises major policies in the period

Table 2.1 Social service provision in Zambia

	1964	1968	1974	1978	1982	1986	1990
Total enrollments (000s)							
Primary	378.6	n.a.	858.2	964.5	1,121.8	1,378.0	1,446.8[1]
Secondary	13.9	n.a.	65.8	89.0	98.9	131.4	161.3[1]
Adult education	2.7	n.a.	60.0	29.7	19.7	n.a.	n.a.
Net enrollment rates							
Primary	n.a.	n.a.	85	84	85	n.a.	68[2]
Health facilities							
Hospitals	48	62	76	82	81	82	82
Health centres and clinics	306	419	595	673	779	883	942

Notes: [1]1989; [2]based on survey data from *Priority Survey, 1991*.

Source: CSO *Monthly Digest of Statistics* (various issues), *Priority Survey, 1991* and *Statistical Review*.

Table 2.2 Summary of Zambian economic policy

Year	Policy	Exchange rate	Fiscal and monetary policy	Trade policy	Other
1964-67	Mixed economy	Fixed exchange rate	Expansionary fiscal policy	Adopted Import Substitution Industrialisation Strategy (ISI)	
1968-74	Mulungushi Declaration announces increased role of state	Fixed exchange rate			Matero reforms (nationalisation policy)
1975-79	Regime of controls	Fixed exchange rate with occasional devaluation. Forex rationing.	Deficit financing and foreign borrowing to maintain consumption levels (including increased consumer subsidies); capital expenditure reduced.	Introduction of import quotas and licenses	
1980-82	First attempts at adjustment	Further devaluations.	Expenditure reducing policies	Protection through high tariffs	
1983-87	Stabilisation and adjustment	Further devaluation. 1985: auction system.	Wage restraint and credit squeeze.	Some trade liberalisation.	Interest rates decontrolled.
1987-89	New Economic Recovery Programme.	Fixed exchange rate and forex rationing (FEEMAC).	Price controls re-introduced.		Interest rate controls re-introduced.

Table 2.2 Summary of Zambian economic policy (ctd.)

Year	Policy	Exchange rate	Fiscal and monetary policy	Trade policy	Other
1990-94	Adjustment (Economic Recovery Programme).	1990: OGL introduced. 1991: official windows unified. 1992: bureaux established, exchange rate unified at market clearing level. 1993: forex sold through auction to banks. 1994: capital account controls abolished.	1991: measures to curb growth of money supply and increase resource mobilisation. 1992: auction of TBills; elimination of subsidies for breakfast meal. 1993: cash budget; tax reforms. 1994: creation of Revenue Authority.	1990: liberalised import regime, export retention and no-funds schemes; embarked on tariff reform aimed at a more uniform and lower tariff regime. 1992: retention rate increased to 100 percent for non-traditional exporters; controls on retention market removed.	1990: private trading in all commodities except mealie meal. 1992: interest rates liberalised; privatisation act.

since independence). The First National Development Plan therefore included a number of import substitution projects, such as a textile mill, a tyre and tube factory and a drugs and nutritional foods plant.

Kaunda's Mulungushi Declaration in 1968 changed this state of affairs. Twenty-six companies were requested to sell a majority share (51 per cent) to government; the government shares being placed in the newly created INDECO. INDECO was also to assume responsibility for the new companies created by government, such as Nitrogen Chemicals of Zambia. The Mulungushi reforms extended state control also through changes in tax and foreign exchange regulations. The following year (the Matero reforms) the government announced its attention to extend its ownership to the mining sector, and a 51 per cent share was realised in 1970. In 1970 attempts were also made to nationalise foreign banks; although these attempts failed, insurance companies and building societies were taken over, and a national bank (National Commercial Bank, NCB) established.

An important consequence of the extension of the state sector was the politicisation of productive activities, since managerial positions in parastatals were political appointees. Kaunda defended this practice in 1978 as a necessary part of his humanistic version of African socialism:

> [there is an] urgent necessity then, to make parastatals an organic part of the body politic. The process of the re-education or de-colonialisation of these organisations is now complete and all their chief executives now appreciate that they are an extension of the Party and its Government in the business sector.
>
> (quoted in Turok, 1979: 74)[4]

In reality, the policy opened the parastatal sector up to various practices which mitigated against economically efficient operations; notably the use of political patronage to increase employment and exploit the potential for a soft-budget constraint to meet the consequent losses. In the words of Sandbrook:

> the clientistic basis of the regime had wasted resources, fostered corruption, and foisted unqualified and redundant employees onto the civil service and multitudinous parastatals.
>
> (Sandbrook, 1993: 33)

The fall in the copper price and the failure to adjust

Arguably, the country could afford the inefficiencies of the control regime whilst it enjoyed copper revenues,[5] this was no longer the case once the price collapse in 1975 undermined this revenue base. Since independence the government had paid lip service to the need to diversify - the development of manufacturing may be seen in this light, but of course the need is to diversify the <u>competitive</u> base of the economy. In fact, the response to the crisis brought on by the fall in the copper price was to extend and tighten controls on the economy. These controls deepened, rather than resolved, the crisis.

For example, a World Bank report critically describes the foreign exchange allocation system (operated through import licences) as it developed during the 1970s (see also Wulf, 1988: 585). The report notes the administrative costs and uncertainty surrounding the procedures, going on to say that the

> most important failure of the present system [is] its failure to allocate import licenses on a rational and efficient basis...
>
> Although it is not possible to document the impact of misallocations of foreign exchange on the macroeconomy, examples of arbitrary or irrational allocations at the micro level are numerous... [For example] importing new vehicles because import licences for tires are unavailable.. adding hundreds of thousands of dollars to the foreign exchange cost of a raw material because the authorities insisted that it be imported directly from the supplier rather than through a local subsidiary.
>
> (World Bank, 1984: 147-48)

The report also points to the socially "pernicious effects" of the system since those who can afford it have access to forex

through the black market and use it to import luxury items, whilst inputs for essential consumer goods, such as soap and cooking oil, are in short supply. This observation is particularly pertinent in the light of criticisms of donor support to liberalised foreign exchange system, discussed in Chapter 4, that such systems permit luxury imports and price necessities out of the market.

Inefficiency in resource allocation reflected not only the limits of the administrative system, but the spread of corruption throughout that system. The annual reports of the Auditor General described how graft and blatant milking of the system permeated parastatals and civil service by the mid-seventies and abuses were regularly documented in the *Times of Zambia* (Good, 1986a: 254; and Burdette, 1988: 115). Inherent inefficiencies and losses stemming from corruption were inevitability mirrored by increasing inefficiencies in production.

The World Bank's review of the industrial sector reported that total factor productivity had declined in fourteen out of seventeen manufacturing sectors (1984: 16-18). The annual decline in these sectors over the period 1965-80 averaged between -0.1 and -13.8 per cent a year, the figure for total manufacturing being -3.8 per cent. Underlying these figures are substantial investment and employment increases in most sectors, with little or no corresponding increase in output. Despite the increases in capital, labour productivity did not improve proportionately, actually falling in seven sectors. These figures are indicative of large increases in the costs of production in most of the Zambian manufacturing sector.

The copper sector was beset by similar problems - described by Gulhati as a "spluttering growth engine" (Gulhati, 1989: 18). The Matero reforms had not significantly increased government involvement in the copper sector in practice, since the sector was run by the mining companies on management contracts. But in 1973, GRZ terminated these contracts (at a cost of US$ 55 million

- in all US$ 150 million was borrowed from the Eurodollar market to pay this penalty and the cost of redeeming bonds held by the companies), increased its control under the newly-formed Zambia Consolidated Copper Mines (ZCCM), and put in place African managers. ZCCM was subject to the same political interference as other parastatals - expatriate employment in the copper industry fell from 10 per cent in 1971 to 3.5 per cent in 1983 (Gulhati, 1989: 19). Costs of production increased - partly because of the growing physical difficulties in mining new seams, but also because of managerial inefficiencies. Productivity fell from 12.3 tons per worker in 1973, to 11.7 tons in 1977 and 9.7 tons in 1981 (Gulhati, 1989: 19). These problems meant that the sector's contribution to government revenue fell in the late 1970s, and further still in the early 1980s so that mining has been a net user of government funds in some years (see Table 2.3).

Table 2.3 Share of mineral revenue in government recurrent revenue (per cent)

	1970-74	1975-82	1983-93
Share of mineral revenue in recurrent revenue	30.0	1.0	9.9

Source: CSO *Monthly Digest of Statistics* (various) and BOZ *Fortnightly Bulletin of Statistics*

Despite the fall in income as a direct and indirect consequence of the fall in copper price, and deteriorating performance of the domestic economy, the government initially responded to the crisis by attempting to maintain consumption levels. Smoothing consumption in the face of fluctuating income is a rational reaction - though the level at which consumption was smoothed implies that permanent income was assumed to be constant or growing, whereas in fact it was on a downward trend. By 1978, GRZ began to realise the extent of its difficulties and introduced an austerity budget (accompanied by an IMF stand-by arrangement) - policies implemented including a 10 per cent

devaluation and a further tightening of controls.

These measures proved inadequate to prevent the decline - which is not surprising as the economy was plagued by a deep rooted structural problem. There was little or no sign of recovery of key indicators such as the current account, which remained in deficit. Even though not grasping the extent of adjustment required, the tightening foreign exchange constraint and growing debt burden, the consequent decline in capacity utilisation, weakening of the tax base and persistent fall in income per capita persuaded government of the necessity of more radical policies. But this was at best a reluctant acceptance so that the experience of the 1980s was one of half-hearted implementation of the needed reforms.

A decade of failed reforms: the 1980s

Zambia had drawn upon IMF funds three times during the 1970s, so that by the 1980s it had reached the upper tranches of IMF resources which are only available subject to policy conditionality. However, the Extended Fund Facility negotiated in 1981 broke down after just over a year. This was just one in a series of programmes - loans and credits from the IFIs to Zambia are detailed in Table 2.4

A new, one-year stand-by agreement reached in 1983, marks the beginning of serious attempts at stabilisation and reform, being accompanied by important changes in personnel and the subordination of the planning office (NCDP) to the Ministry of Finance (Gulhati, 1988: 31). Targets in the stand-by covered improvement in the current account, increased government revenue and reduced expenditure (including a cap on public sector wages and employment), a general 10 per cent wage ceiling, devaluation and move to a flexible exchange rate system and meeting repayment obligations on rescheduled arrears. Neither this stand-by, nor the subsequent one in July 1984 were fully drawn down, despite what Gulhati calls "strenuous efforts" to meet the targets (Gulhati, 1988: 33).

Table 2.4 IMF agreements and World Bank programme lending to Zambia, 1983-1994

Date		Loan/credit	Completed or terminated
1973	May	IMF stand-by agreement IBRD programme loan	
1976	July	IMF stand-by agreement IBRD programme loan	
1978	April	IMF stand-by agreement	
1981	May	IMF Extended Fund Facility (36 months)	Broke down July 1982
1983	April	IMF stand-by agreement (12 months)	Not fully drawn because of debt arrears
1984	March	IBRD export rehabilitation and diversification loan	
	July	IMF stand-by agreement (21 months)	Suspended April 1985, because of debt arrears
1985	July	IDA/IBRD agricultural rehabilitation project	
	October	IDA industrial reorientation credit	
1986	February	IMF stand-by agreement (24 months)	Suspended when auction abandoned (and other conditions already not met)
	June	IDA economic recovery credit	Suspended May 1987 (auction abandoned); completed in 1991
1991	March	IDA second economic recovery credit	Completed
	April	IMF Rights Accumulation Programme	Scheduled for completion June 1995
1992	June	Privatisation and industrial reorientation credit	Completed
1993	June	Second privatisation and industrial reorientation credit	
1994	March	Economic and social adjustment credit	Scheduled for completion late 1994

Attempts to reverse the decline of the economy in the period 1978-85 had concentrated on expenditure-reduction (demand contraction), which could not of course deliver growth in the short-run (nor was it meant to). But whilst stabilisation is probably a pre-condition for growth (a fact that was to prove a problem in the early 1990s), stabilisation is not all that is required. In line with critique of stabilisation programmes developed by Killick (1984), amongst others, it is difficult to see how stabilisation alone could bring about the adjustment which was required.

The programme put together by GRZ during 1985 recognised this problem, and sought to rectify some of the major distortions in the economy - commercial interest rates were decontrolled in September, reforms planned in industry and agriculture (including subsidy reduction and elimination of most price controls) and foreign exchange arrangements liberalised in preparation for the auction. The auction was seen as the centre-piece of the reform efforts, and arguments over its effects led to the abandonment of the programme in 1987. Probably as important in relaxing inefficiencies in the forex allocation system was the legalising of "own funds" imports.

The auction, introduced in October 1985, allowed certain users of foreign exchange to bid for the foreign currency through the commercial banks on a weekly basis, provided they had documentary evidence of tax clearance and *pro forma* invoices for imports (Bates & Collier, 1993: 407). Import licences were automatically given to successful bidders - eliminating subjective and corruptible administration methods and reducing the time lag between submission of application and allocation of foreign exchange. At the same time, the "own-funds" import scheme was initiated, whereby any foreign exchange holdings abroad were permitted to be used for imports without any questions as to the origins of these funds. Major traders in the market, such as ZCCM, Zambia Airways, the commercial banks, the government and government owned institutions, were excluded from

the auction. In consequence, during 1986 only 22 per cent of the total value of foreign exchange transactions entered the auction system. However, the exchange rate set by the auction was important as it was used for all official transactions.

Whether the price of foreign exchange set by supply and demand in only one particular, and quite small, market segment was the appropriate rate was one source of criticism of the auction system (Wulf, 1988: 591). More generally the government was opposed to the massive devaluation which accompanied the auction - the rate rising from K 2.2 a dollar before the auction to a peak of K 21 a dollar. The government's opposition may have been based on "national pride" over the value of its currency or the more economically grounded concerns over the impact of the devaluation on the government budget (through external debt service obligations and the kwacha it had to pay ZCCM and other exporters for the forex they had to hand over). Public reaction to the auction system was also unfavourable - blaming it for the high inflation which coincided with the auction and allowing the rich to import luxury consumer items whereas essential goods became unaffordable.

The government picked up these latter arguments. For a while it preserved the auction system but actively worked against its successful operation: the governor of the Bank of Zambia was replaced with an official opposed to the auction system, confidence in the system was undermined by the government auctioning more funds than were actually available (so importers had to wait before receiving the forex), bids were published in the national press - with the implication that high bids were "unpatriotic" - and, at one point, refusing to accept bids above a certain price!

On May 1st 1987, President Kaunda announced that the auction was ended, relations with the IMF and World Bank were broken and controls reintroduced. The kwacha was revalued to a fixed rate of (to K 8 a dollar), debt service payments were limited to 10

per cent of export earnings after key imports (ZCCM, Zambia Airways, fuel and fertiliser), interest rates cut and prices set. As Colclough says, these policies "represented a return to the old regime" (Colclough, 1988: 60). The previous hiccups in the programme during the 1980s had been just that - temporary hitches that were resolved with a renewed effort on the part of government. The break in 1987 was something far more fundamental than a hiccup - the government had chewed up the programme and spat it out. Why had these well-supported reform efforts failed?

Gulhati suggests three potential causes for the failure of the 1985-87 reform programme: (i) inherent problems in program design; (ii) insufficient support from donors; and (iii) lack of domestic commitment (Gulhati, 1989: 31). Probably no reform programme is perfect, but the 1985 reforms were certainly a move in the right direction.[6] Although, as discussed in Part 2.3, Gulhati argues that the response by bilaterals to the reform effort was insufficient, Zambia did receive comparatively high levels of aid (see Chapter 3). Most commentators place emphasis on lack of political support for the reforms.

The causes of the lack of widespread political support for reform can be readily explained. Although undoubtedly having a wide power base at independence, support for UNIP waned thereafter. Importantly, the backing of the miners was lost in the early seventies as a rival party (UPP) grew in strength in the copperbelt. The banning of UPP in 1972 and formation of the one-party state the following year alienated the miners altogether - henceforth the government took their views into account only insofar as there was a danger of strikes or riots. The business sector - certainly foreign, but also domestic - was also either isolated from or opposed to the Party; so that the Party was, in Bates and Collier's words "alienated from many of the most productive forces in the economy" (1993: 393).

UNIP did of course have a powerful constituency, and that was urban consumers and public sector employees. But these were

the very groups set to suffer most from the reform programme. Reforms would remove consumer subsidies, and the price controls which benefitted those in urban areas who had access to these goods. Public sector cuts and elimination of subsidies would force retrenchment and restructuring in the public sector, reducing the direct and indirect income employees enjoyed. UNIP politicians, recognising these interests, themselves resisted reform; according to some observers it was Kaunda alone who agreed to the programme:

> [the reforms] were extremely unpopular among nearly all strata of the population, from senior cabinet and party figures down to the unemployed urban worker... President Kaunda had to ram them through the cabinet.
>
> (Callaghy (1989), quoted in Gulhati, 1989)

Whatever Kaunda's reasons for supporting reform, they did not survive continued opposition to the programme, with the eventual collapse of the programme.

Adjustment without stabilisation: performance in the 1990s

Unsurprisingly, the economy did nor recover with the return to controls. In fact it was in the late 1980s that decline in living standards began to feed through to deteriorating welfare indicators (see Table 1.1). Moreover, the IFIs were not eager to allow Zambia to leave the fold, so in September 1989 GRZ once again entered discussions with the Bank and the Fund. (In fact contact had been maintained through "the break", though there were no official operations). Normal relations with the Bank were resumed with the clearance of IBRD/IDA arrears in March 1991 and the IMF's Rights Accumulation Programme (RAP) begun the following month. Both of these operations illustrate the degree of commitment displayed by donors to having Zambia resume the reform programme.

On 12th March 1991, Zambia was in arrears to the World Bank to the amount of US$ 319 million.[7] On that day US$ 119 million of these arrears were cleared - US$ 19 million from Zambia's own

funds and US$ 100 million with monies from the Donor Support Group, raised especially for that purpose. Therefore arrears remained at US$ 200 million. The following day the Bank of England made a bridging loan of US$ 200 million to Zambia, which was used to clear the arrears. Once the arrears were cleared the Bank released US$ 40 million of funds held in suspense following the break in 1987 and US$ 160 million of new IDA credits (the Second Economic Recovery Credit). These funds from the Bank - totalling US$ 200 million - were repaid to the Bank of England. The whole circular transaction is reported to have taken 72 minutes!

The RAP is a rather similar trick carried out over a much longer time period. Since Zambia is in arrears to the IMF it cannot draw any Funds, thus cutting the country off not only from a potentially important source of funds but also, more importantly, apparently removing the possibility of an IMF programme which the World Bank, bilateral donors and commercial organisations regard as a prerequisite for much of their own involvement. The RAP simultaneously overcomes not only this difficulty but also manages to - in all but name - reschedule the IMF debt. The agreement extends beyond the restoration of IMF drawings, as bilateral donors in the Support Group are then intended to make OGL grants equivalent to Zambia's scheduled repayments to the Fund.

In order to "stay on the RAP", Zambia has to meet with policy conditionality of the type which normally accompanies adjustment programmes - (the fact that the government has failed to do so in important respects is discussed below) - and stick to an agreed programme of settling arrears on external debt. So long as these requirements are seen to be met then Zambia accumulates the "rights to borrow" the monies it could have borrowed if it were not for being in arrears to the Fund. By 1995 the value of these rights will be equal to the value of the outstanding IMF arrears. At that point, a bilateral donor is expected to make a bridging loan of an equivalent amount to

Zambia, which then uses these funds to pay off the arrears. Once the arrears are cleared the accumulated rights are paid over to Zambia, who uses them to repay the bridging loan to the donor. Zambia still owes the same amount to the IMF - but now it is new debt, not arrears, so the debt has effectively been rescheduled.

The conditionality attached to the RAP may be divided into three areas: (i) ceilings on reserve money and domestic credit creation; (ii) various financial indications, including reduction in debt arrears; and (iii) policy changes to liberalise the foreign exchange and credit markets (Adam *et al.*, 1993). GRZ has made rapid strides in liberalisation. Indeed, at the March 1994 CG meeting in Paris, Mr. Stephen Denning, director of the World Bank's Southern Africa department, said, "it's difficult to find a country that's done more" (quoted in *Financial Times*, 26/3/94). But there have been problems - slippages in reduction of arrears

Table 2.5 Benchmarks and outturns for IMF reserve money targets (K million)

		Benchmark	Adjusted benchmark	Actual
1992	Quarter 1	22,648	-	22,899
	Quarter 2	23,711	-	27,310
	Quarter 3	28,889	26,247	32,808
	Quarter 4[1]	30,551	37,533	36,660
1993	Quarter 1	40,732	-	60,001
	Quarter 2	41,546	47,906	64,073
	Quarter 3	70,656	-	73,208
	Quarter 4	76,398	80,791	87,475

Notes: - none

[1]First column in adjusted benchmark and the second modified.

Source: Andersson (1994: 6-9).

(though these may be attributed to shortfalls in donor finance) and, more significantly, very substantial overshooting of monetary targets. Table 2.5 summarises the reserve money targets and outturns on a quarterly basis for 1992-93; the outturn has overshot the benchmark in every case.

This excessive monetary growth has meant that inflation has been much higher that expected, and in fact increased rather than decreased. Already in 1991 reserve money had grown at 88 per cent over the year rather a target of around 25 per cent. Although no rights were accumulated in that year, the programme was not discontinued, and the rights which had been missed in that year were distributed over the remaining years. The IMF has continued to accommodate slippage: revising targets upward in line with actual performance. Whilst reasons may be found to explain each of these slippages it is clearly true that until the middle of 1993 - when monthly inflation reached an annualised rate of nearly 300 per cent - the government had failed to stabilise the economy. The reasons why donors continued to support Zambia in the face of apparent policy failure are discussed in the next section.

In order to control monetary growth, GRZ introduced a cash budget in January 1993. However, the design of the scheme did not prevent the government from making unsterilised purchases of forex for ZIMOIL imports and external debt requirements so that rampant money supply growth and inflation continued in the first part of the year. These "loop-holes" were plugged and the government pushed up the nominal rate on 28 day TBills in a further effort to restrict monetary growth.

In July the rate on TBills was 9.8 per cent a month - equivalent to 208.5 per cent a year. But in July inflation was running at an annualised rate of 285 per cent, so the real interest on the TBills was negative. This situation was sharply reversed the following month when inflation dropped to an annualised rate of 34.5 per cent. Given the nominal annual

return on TBills of 180 per cent the drop in inflation turned TBills into a very desirable asset. In August the monthly return on a dollar investment (i.e. adjusting for exchange rate movements) was 17.9 per cent (see Table 2.6). These returns had the desired effect, with monetary growth and inflation both plummeting (the price level actually fell in November). As investors switched into kwacha the exchange rate appreciated - falling from around K 570 a dollar in July to K 370 a dollar in October. Whilst stabilisation has been achieved, if it can by sustained by this trick of "Ponzi finance" (a term also used by Adam *et al.*, 1993) must be open to doubt.[8]

Bilateral donors are expressing increasing disquiet over the adjustment programme, a matter which is taken up in Part 2.3. They have a longer record of concern over political events. Donors - hunting for means of translating their new-found concern for "good governance" into concrete actions - favoured Zambia as being one of the first sub-Saharan African countries to move to a multi-party system and to have open elections. This support wavered as elements of arbitrary rule remained and corruption continued unabated. The introduction of the state of emergency in 1993 caused some donors to suspend aid. At the December CG meeting most donors, led by the US and UK focused on political issues - in fact requesting the removal of specific members of government involved in drug smuggling. GRZ has moved to accommodate the donors on these issues.

The attention paid by bilateral donors to issues of governance is now not the only the difference between them and the multilaterals. As is discussed in section 2.3, several bilaterals are increasingly concerned about the course of adjustment in Zambia. Before discussing these concerns, it is useful to take a step back and consider the challenge of adjustment facing Zambia.

Table 2.6 Real returns to government TBills

		Annual	Monthly return		Inflation	Exchange rate		Real monthly return
			Kwacha	Dollar		Buying	Selling	Kwacha
1993	July	208.5	9.8	13.9	285.4	540.3	564.5	-1.8
	August	186.1	9.2	17.8	34.5	447.3	521.2	6.5
	September	165.8	8.5	-2.4	54.6	345.6	414.3	4.6
	October	150.6	8.0	-23.6	1.2	362.2	384.0	7.8
	November	98.7	5.9	-30.2	-17.6	457.0	511.5	7.6
	December	104.6	6.1	-0.3	62.0	649.0	693.7	2.0
1994	January	147.0	7.8	2.1	103.5	647.5	691.2	1.6
	February	146.3	7.8	n.a.	77.5	642.8	683.7	2.8

Source: calculated from BOZ *Statistics Fortnightly*.

The challenge of adjustment facing Zambia

Zambia's post independence strategy shared common elements with many other sub-Saharan African countries - increasing the role of the state and creating a manufacturing sector with considerable state support. The difference in Zambia was that it was rich enough to afford it at the time. Economists studying "patterns of growth" would expect the share of manufacturing in GDP to rise with income. Zambia has an economic structure which may have been appropriate if the country had continued to grow at the rate experienced in the late 1960s, but which seems wholly inappropriate for a country at its current income level. Figure 2.3 shows that Zambia is, for its level of income, the most industrialised country in the world (measured by the deviation from the fitted line). Table 2.7 shows the contribution to growth of the different sectors. The service sector - that is, the rise in government employment - accounted for the early growth; to be replaced by the manufacturing sector in later periods. But growth in these sectors is not sustainable as it was based on the wealth of the mining sector - which, as the figures show, experienced an average decline in output in all periods.

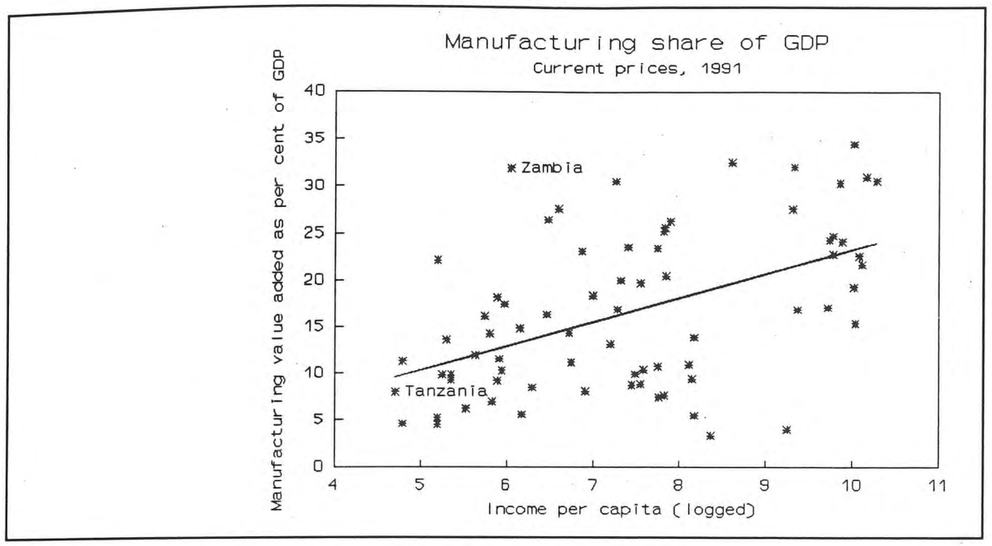
It might be suggested that the high share of manufacturing

Table 2.7 Sectoral contribution to growth

	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1993
Agriculture	0.51	0.43	0.04	0.41	0.44	2.03
Manufacturing	1.70	0.95	0.25	0.40	1.55	-0.09
Mining	-1.28	-0.15	-0.07	-0.19	-0.22	-0.11
Other industry	0.31	1.10	-0.25	-0.20	-0.26	-0.22
Services	3.69	1.53	0.18	0.31	0.15	-1.47
Other	0.19	-0.05	-0.17	-0.20	-0.02	0.03
GDP	5.12	3.81	-0.03	0.53	1.64	0.17

Source: calculated from project database.

Figure 2.3



is on account of enterprises related to the mining sector. In fact, in 1991 manufacturing sub-sectors wholly unrelated to the mining sector (food and beverages; textiles; wood and paper products) accounted for nearly two-thirds (64 per cent) of manufacturing output (GRZ, 1992: 51). Sub-sectors which may be related (metal products and other manufacturing) accounted for a further 28 per cent and non-metallic mineral products only 8 per cent. The main reason for Zambia's large manufacturing sector is that at independence the country embarked on a development strategy which it could ill-afford in the light of subsequent developments. As President Kaunda noted (but, in 1983, rather belatedly so):

> the major problem [in Zambia was that] we were born - unfortunately - with a copper spoon in our mouth.
>
> (quoted in Good, 1986a: 241)

The challenge facing Zambia is to adjust the economy to a structure more befitting to a country with its income level and prospects. What this challenge means is the development of the agricultural sector - possibly to the extent of requiring rural migration (Zambia is one of the most urbanised countries in Africa).

There is debate over the extent to which the Zambian government has discriminated against agriculture. Andersson (1990) argues that the sector has been ignored and Good says that the "backwardness of the country's agriculture is chiefly derived from the action (and inaction) of the Zambian state" (1986a: 239), whereas Kydd (1986) argues that there has been support, but of the wrong sort (mainly for large farms rather than smallholders). Whatever the intended policy, the result has been falling living standards in rural areas and reduced incentives for agricultural production. Good states that the rural-urban terms of trade declined by 65 per cent between 1965 and 1980 - they have not recovered since then. The ratio of the index of the price of maize (which constitutes the bulk of agricultural output) to the consumer price index modestly rose in the early 1980s, but plunged thereafter.

Discrimination against agriculture has not only been through pricing policy, but also on account of the increasingly decrepid state machinery, which could frequently neither collect nor pay for crops (Good, 1986b; and Geisler, 1991). Geisler (1991) describes the inefficiencies in maize marketing by the late 1980s and early 1990s; to cite just one example of many:

> In September 1991, almost certainly as an act of protest by the local farming community, 27,000 bags of maize were set on fire in Mumbwa, having stayed uncollected for three years, allegedly because of transport problems, although the depot was only 100 km west of Lusaka on the road to Mongu. By the end of October an estimated 500,000 bags of maize were reported to be soaked and wasted.
>
> (Geisler, 1991: 116)

In the early 1980s the Bank was very optimistic about the time adjustment would take. With time it has modified its views both on the time required for, and the nature of, adjustment. Attitudes to adjustment policy can be seen to have passed through three phases. These phases are:

- stabilisation: in the early 1980s the emphasis was on

stabilisation (exchange rate adjustment and fiscal discipline were the main focuses, along with removal of tariffs to increase openness);

- supply-side: by the mid eighties there was increasing recognition that "getting the prices right" was a necessary but not sufficient condition for growth so that more attention was paid to supply side considerations (mostly economic infrastructure); and

- poverty-oriented adjustment: the call for "adjustment with a human face" and the establishment of the "New Poverty Agenda" (1990 World Development Report and *Poverty Handbook*) has increased explicit incorporation of social sector development into adjustment programmes.

Zambia's programme in the mid-80s had a substantial stabilisation component - but was also accompanied by liberalisation in some markets. At the time when attention was being paid to supply-side issues Zambia was not participating in an adjustment programme. But the importance of this point was forcibly brought home by the experience with the 1993 maize crop. GRZ budgeted only to buy its food security reserve - the rest to be handled through private marketing networks. But the private sector failed to respond - whether because of low profits, poor economic infrastructure or lack of physical or entrepreneurial capital has not been adequately answered. But it should not be surprising that the private sector did not rush in on a large-scale into such a large sector in which it had no experience.

The Bank's most recent work - including the Zambian poverty assessment - recognises the importance of human development. These are all important issues, but it is also important to keep in mind the question of "what is Zambia adjusting to?". It has been argued here that the adjustment must be toward a more rural-based agricultural economy - which may entail the absolute, rather than just relative, decline of the manufacturing sector.

Government and donors must be clear on, and fully committed to, this underlying rationale of the adjustment programme.

2.3 The role of donors in the policy process

What has been the role of aid in Zambian reform? Has aid facilitated or impeded reform? There is disagreement on this issue. Gulhati believes that the 1984-87 reforms failed largely because of insufficient support by the donors:

> [Whilst] the World Bank and IMF made strenuous efforts during 1983-86 to make their own funds available to Zambia and to mobilize aid and debt relief from others to support the intensive reform process... bilateral ODA commitments failed to respond adequately.
>
> (Gulhati, 1989: 35-6)

By contrast, Good (writing on the later period when reforms had been abandoned) was pessimistic that the UNIP government was genuinely committed to political and economic reform, and that financial support would reinforce this laxity:

> Zambia's acute malaise is a consequence of chiefly internal factors... As things stand, debt concessions and additional foreign aid would worsen rather than improve the situation, since it would strengthen and encourage an inefficient and authoritarian regime without bringing benefit to the majority of the people.
>
> (Good, 1989: 298)

These quotations raise two separate issues: have donors supported reform? and did this support actually assist reform?

During the course of the 1980s the various bilaterals aligned themselves with Bank/Fund conditionality. Formal recognition of this fact was given in the fact that balance of payments support is, for most donors, conditional upon an agreed adjustment programme being in place. For some donors this conditionality takes the form of getting the IFI's "seal of approval", whereas others may set their own conditionality.

Here, the role of bilaterals in the policy process is

considered from three perspectives. First, is a brief discussion of Swedish conditionality in Zambia. Second, we consider if the flows from different donors are consistent with supporting adjustment. Finally we review how different donors view macroeconomic policy and performance in Zambia at present.

The evolution of Swedish policy conditionality in Zambia

During the 1970s, Sweden's country programming strategy was to co-operate with governments pursuing policies that efficiently served the general development objectives of growth, equity, democratisation and independence. Policy conditions were not an issue and, in retrospect, it is striking that SIDA rarely terminated its contributions to projects that were inadequately supported by the recipient government: disputes and withholding funds were mostly related to the absence of reporting or to other formalities.

But this attitude changed during the early 1980s, as the responsibility of bad policies for the low productivity of aid projects and poor growth performance more generally was recognised. Hence Swedish aid become more closely aligned with policy conditions: the substantial rise in import support to Zambia in 1985/86 can clearly be seen as an encouragement of the adjustment programme. This connection was confirmed by the harsh Swedish reaction to Zambia's break with the IFIs in May 1987. However, Sweden was amongst those who greatly encouraged an active policy dialogue between the World Bank and Zambia, with the purpose of getting the programme back on track again.

The re-establishment of links with the IFIs coincided with bilateral donors paying serious attention to issues of good governance. The initial enthusiasm for multi-party democracy and free elections has been replaced with a concern that sufficient institutional mechanisms to ensure transparency and accountability are not yet in place. The Swedish government will base its support on actual progress in the political reform processes (a view which was strongly stated at the March 1994 CG

meeting): which may be one factor behind the substantial decrease of the Swedish balance of payment support to Zambia during the budget years of 1992-1994.

So far as economic policy is concerned, until recently, Sweden accepted that the conditions as laid down by the IFIs were the correct ones, and was in agreement with these institutions over the state of progress toward reform in Zambia. Statements by the Swedish delegation to CG meetings in June 1985, at the start of the first adjustment effort, and July 1990, during the early stages of the most recent reform programme, show considerable agreement with the position of the IFIs. But by the meetings in March 1991 and those in 1992 (March and December), this support was moderated with mild reservations. A stronger stand emerged at the April 1993 meeting when Sweden said that conditionality should be *ex post*, rather than *ex ante*. This view has been reinforced in the two subsequent CG meetings (December 1993 and March 1994). Below we consider the current views of other major donors - but first we consider whether donors financing has been consistent with the intention of supporting adjustment.

Donor finance for adjustment in Zambia

Stefan de Vlyder has been strongly critical of donor support for adjustment - arguing that practice has helped countries delay reform. In making his case, he frequently draws on the Zambian example:

> Zambia has probably received more policy-related assistance than any other African country (with the possible exception of Tanzania). But it is certainly not the best pupil in the class that has been rewarded....
>
> ... countries such as Zambia, Mozambique and Rwanda, classified as poor performers [by the World Bank], to which aid disbursements, not least from the IFIs. have been huge.
>
> (de Vlyder, 1994: 19 and 20)

Here we consider whether donors have supported reform by an

analysis of their response to Zambia's on-off relationship with the reform process. Table 2.8 shows real gross aid inflows from the major donors to Zambia (given as annual averages in millions of constant 1980 US dollars), where the periodisation reflects the various macroeconomic policy regimes of the Zambian government. Donors supportive of reform are those whose aid rose in the 1985-87 period, fell back in 1988-89 and picked up again in 1990-91. Using this definition of support four categories may be identified:

1. Donors who are strongly supportive of the reform process (i.e. those whose aid rose during both reform episodes and declined in real terms between episodes): IDA, Sweden, UK, US and the Netherlands;

2. Donors who are moderately supportive of reform (i.e. those whose aid rose during reform, but also experienced a moderate growth between reform periods): Germany and Canada.

3. Donors whose aid does not support the reform process (i.e. those whose aid rose with initial reform, continued to grow - albeit at a slower rate - between reform periods, and has declined during the most recent reforms): Japan, Norway and EC; and

4. Donors whose flows move against the reform process: aid from UNDP fell during the first reform period, rose during the break with the multilaterals and has registered an insignificant change during the most recent reform period.

The IMF is in a category of its own, since it cannot disburse funds to a country in arrears, so that Zambia has received no new money since 1985.

The results shown by Table 2.8 are largely consistent with our prior expectations. The strongest support for the programme

Table 2.8 Donor support to Zambia during different periods (constant 1980 US$)

	Real gross ODA (annual average)				Percentage change over previous period		
	1980-84	1985-87	1988-89	1990-91	1985-87	1988-89	1990-91
Germany	23.7	45.5	48.0	158.5	91.8	5.4	230.3
Japan	14.2	68.0	105.8	54.3	380.0	55.6	-48.6
IDA	6.9	86.3	5.2	84.6	1158.6	-94.0	1534.8
Sweden	25.6	45.9	40.3	47.9	79.5	-12.2	18.7
United Kingdom	27.6	55.5	33.7	40.8	101.2	-39.2	21.0
United States	30.0	53.6	21.8	40.1	78.6	-59.4	84.0
Netherlands	17.8	47.6	27.8	32.1	166.8	-41.5	15.3
Norway	12.2	38.4	42.8	38.9	213.8	11.4	-9.1
EC	20.5	30.4	38.9	21.7	48.3	28.1	-44.2
Canada	13.1	24.7	27.8	38.8	88.5	12.3	39.6
UNDP	3.2	2.7	5.1	5.3	-16.6	92.0	3.7
IMF	5.2	0.0	0.0	0.0	-100.0	n.a.	n.a.
Total	233.1	610.3	519.6	673.9	161.8	-14.9	29.7

Source: Aid data are gross ODA as reported in OECD *Geographical Distribution of Financial Flows to Developing Countries*, deflated by a dollar based import price index for Zambia (calculated from *Monthly Digest* and *International Finance Statistics*).

(with very substantial increases during both reform periods) comes from IDA. A very substantial share of IDA funds have been adjustment credits, whereas the bilaterals - who have a larger share committed to ongoing projects - have less flexibility.

The United States and United Kingdom both embraced adjustment as a basis for their aid policies at a early stage of the 1980s, and this preference clearly shows in the data. They are also both donors which have now attached a good deal of importance to the good governance issue, which helps explain the strength of support in the most recent reform period. Both Sweden and the Netherlands have also been supportive of adjustment - though this support is becoming increasingly less uncritical.

Donor perceptions of Zambian reform

Discussions with representatives of the different donor agencies in Lusaka revealed a pattern broadly consistent with the data. The World Bank (and IMF) take a very favourable view of reform in Zambia. When questioned about the poor performance of the economy to date they reply that it is policy not performance which counts; and on policy GRZ has moved further and faster than probably any other government in Africa (a view repeated in the Bank presentation to the March 1994 CG meeting).

The US and the UK in large part share the IFIs' perception, though an important difference is that the bilaterals are also concerned with governance issues, whereas the multilaterals are not. Hence the CG meeting December 1993 was dominated by a UK and US led initiative to focus on issues of corruption, and more specifically alleged involvement in drug trafficking by senior members of the government. These concerns were so explicit as to require the removal from government of named individuals, which has since been done (and the week before the March 1994 CG two former senior government officials [a couple] were arrested); legislation on ethics has also been prepared to go before Parliament. However, there is some concern - particularly on the

part of the US - that the benchmarks set by the Bank and Fund in some areas (such as privatisation) are insufficiently concrete. Thus, whilst for both these donors, conditionality means receiving the "Bank/Fund seal of approval", the US is setting more specific targets for elements of the programme (but which are consistent with the overall framework).

All the other bilaterals may fairly be described as having some reservations about the programme. Such reservations may take two forms: (i) a concern that there are design faults in the programme; and (ii) a concern that the programme is being implemented with insufficient rigour (there is too much slippage). The majority of the donors fall into the latter category. As documented in Part 2.2, GRZ has consistently <u>failed</u> to reach benchmarks laid down by the Fund, yet the benchmarks have been revised and waivers granted to maintain the position that the country is "on course" with the adjustment programme.

Such treatment may results from either (or both) the following motives on the part of the IFIs: (i) there have been genuine mitigating circumstances, such as the 1992 drought, the failure of the private sector to market the 1993 maize crop, and shortfalls in donor finance compared to projected financing gaps; and/or (ii) so long as the programme is declared satisfactory the Bank and Fund will continue to collect their money *via* the debt relief and other support provided by the bilaterals. The second reason is not entirely credible - but neither is the first. Whilst there have indeed been mitigating circumstances, there has also been a slowness on the part of GRZ in some areas of reform, notably: public sector reform (substantial pay increases and rumoured, but unconfirmed, increase in the size of the civil service of 9,000 people in 1993); privatisation, in particular the handling of Zambia Airways (which received subsidies amounting to one per cent of GDP in 1992) and ZCCM; and declining revenue performance (the tax ratio having fallen in 1992 and again in 1993). These issues may be expected to dominate the agenda in forthcoming policy dialogue.

The revenue question is of concern given projections of Zambia's future aid requirements. Estimates presented by GRZ to the March 1994 CG show a required gross inflow of the order of US$ 600-700 million for the foreseeable future - even if these inflows are forthcoming the debt stock in 2008 will still be just under US$ 5 billion and Zambia unable to meet her own debt service obligations from own resources (see Chapter 3 for more details on these projections). Some donors are therefore keen that GRZ should be more strongly encouraged to increase domestic efforts at resource mobilisation. Norwegian conditionality now includes the requirement that tax collection should rise, and the Swedes are considering linking disbursements of balance of payments support to GRZ's revenue effort. Such conditions, whilst not inconsistent with the adjustment programme, represent additional conditionality over and above that required by the IFIs.

These donors, along with the Netherlands, are also concerned about the amount of slippage tolerated by the Bank and the Fund. These donors have a sense that the picture painted by the Bank and the Fund is too positive. However, none of the bilaterals have the in-house analytical capability of the IFIs and so must rely on them. The desire for a critical appraisal of the reform process led SIDA to recruit an external consultant to examine how well the programme is working. This report expressed some concern that reform was sustainable and that parts of the real economy are suffering. However, the recommendations made are no different from the current concerns on major issues (privatisation, revenue collection, drug trafficking and corruption, Zambia Airways and ZIMCO, land market and protecting social and investment expenditure). As a focus for donor discontent the report attracted much attention, including a quite angry response from some quarters favourable disposed towards the adjustment programme.

The Japanese have been most openly critical of the programme; articulating the view (which Japan has expressed more

generally) that the state should play a more active role in leading the market. They believe that the "pillars of the economy" - manufacturing, mining and agriculture - are suffering under the programme and should receive more direct support. They have withdrawn from market-based foreign exchange allocation and have reverted to an allocative system (despite appeals from other donors and GRZ not to do so).

There is a danger that differences of opinion amongst donors about the course of the adjustment programme will lead to a proliferation of different conditionalities. Such proliferation may lead to conflicting conditions being required by different donors. But even if there is no direct conflict, the government will still be faced with time-consuming multiple reporting requirements and policy discussions with many agencies.

Proliferation of conditionality should be avoided, and the donors speak with a common voice (as has largely been the case to date, with emerging exceptions as noted above). But it will not be possible to preserve a common position unless a forum exists in which donors can work through their differences to agree a position - no such forum currently exist. It is not true to say that the CG meetings provide such a platform, since these are an interface with GRZ, and agreement needs to precede this stage. It is even less true to claim that, through their respective Boards, the IFIs represent the bilaterals: (i) the lines of communication from in-country missions to HQ staff dealing with multilaterals may be rather long; (ii) IFI Board representatives come from donor finance ministries, not the agencies responsible for the aid programmes; and (iii) even a fairly large grouping of smaller donors may not be able to influence a Board decision.

Judging from the comments of some bilateral agency staff, the IFIs seem to make insufficient effort to engage the bilaterals, despite the meetings and debriefing sessions which are held. Documents such as that prepared for SIDA have not been

used as the basis for a constructive dialogue. To sustain a coherent adjustment programme it would be useful to provide opportunities for such dialogue.

2.4 Conclusions

Macroeconomic policy at independence in Zambia was determined by the desire to redress imbalances in income distribution between black and white and to spread the benefits of the copper wealth amongst the population. The role of the state expanded as the civil service mushroomed; this role was reinforced by the Mulungushi and Matero reforms which expanded the state's role in the productive sectors. Many of these bold plans were based on the presumption of continuing high revenues from the copper sector - but Zambia suffered substantial declines in the terms of trade from the mid-seventies, from which there has been no subsequent recovery. Hence, what may be seen as an initially brave attempt to wrest control of the country's development for the benefit of its people turned to costly failure, as the state machinery blundered into inefficiency and corruption.

Zambia's plight may be characterised as one of Dutch disease. Responses to a boom are not readily reversible once the boom is over - typically, as in the Zambian case, scaling down the public sector and the support it provides to living standards. The failure of GRZ to tackle this problem when it first arose - and the support they received from donors - has made the challenge of adjustment far more difficult, as structural problems have been compounded by years of mis-guided policies and half-hearted reform. What is needed now is firm commitment by government and donors to a programme that will lay a genuine basis for sustainable growth.

The relationship between reform and aid in Zambia is problematic. Before the 1980s, there is no doubt that the Zambian government was pursuing macroeconomic policies which have been detrimental to the country's growth and that donors, at least implicitly, supported these policies. But in the period

since the mid-1980s, we would conclude that, on balance, aid has supported reform (in recent years). The Zambian government's commitment to reform has not been strong, so that donors have influenced both the extent of policy change and its content. This conclusion is hedged with the reservations that some donors (not the Swedes) have not been particularly supportive and that all donors have been lax in certain areas of the programme. Current trends to conditionality proliferation are to be resisted - but pressure must be put on the IFIs to make them more open to discussions with other donors so that the latter feel their voices are heard.

Notes to Chapter 2

1. Unless otherwise stated, all data are drawn from the database prepared for this project, details of which are given in Appendix 1.

2. The incremental capital output ratio has been negative in many years - and extremely high when it has been positive.

3. Knight argues that most the remaining differential was attributable to differences in education (only 6 per cent of the difference is not explained by education; Knight, 1971: 96).

4. The expression "the Party and its Government" - embodied in the new constitutions of 1973, which ushered in the Second Republic - well captures the relative position of the two institutions within the one-party state (Burdette, 1988: 104).

5. In fact, there were signs that the economy was heading for crisis even prior to the price fall, but this event rapidly accelerated the course of events.

6. Of course, authors attributing mainly external causes to the crisis would dispute this statement (see, for example, Clark and Allison, 1989)

7. The details of this transaction are taken from Faber (1992: 211-12).

8. Ponzi finance is the practice of meeting repayment obligations through further borrowing. The expression originates from an Italian of that name who raised funds on the promise of high-yielding investments but who, in fact, used all the monies raised to support an extravagant life-style and pay dividends to existing investors. As may be expected, this bubble burst and Ponzi was sent to prison.

CHAPTER 3

AID AND DEBT IN ZAMBIA

3.1 Introduction

To discuss the Zambian economy is to discuss debt. By the early 1980s Zambia was amongst the most debt-burdened of countries at comparable levels of income. Despite some relaxation of the burden in the recent past, debt remains an overwhelming constraint on the Zambian economy.

Part 3.2 describes the historical evolution of the debt stock - from non-concessional borrowing in the 1970s to the dependence on aid flows of today. It is not only the source of inflows which has changed, but also their nature hence the discussion in Part 3.2 analyses the changing pattern of aid and other inflows. Projections of future debt service obligations are also discussed. Part 3.3 concludes.

3.2 The growth of Zambian debt

Zambia's total external debt has risen steadily from around US$ 650 million in 1970 to over US$ 7.2 billion by 1991. But, as shown in Table 3.1, this growth has masked some significant changes in the underlying composition of the debt stock.

Debt to private creditors

The most marked change is the decline of the private long-term debt - from over 60 per cent of the total in 1970-75 to less than 10 per cent in 1986-91. Private debt grew during the late 1970s, but has fallen more or less persistently during the 1980s - so that by 1991 outstanding private debt was less in nominal dollars than it had been in 1970. Four possible factors account for the decline in private debt: (i)

Table 3.1 Composition of Zambia's external debt (per cent of total debt)

	1970-75	1976-80	1981-85	1986-91
Concessional	21.7	21.9	26.3	28.5
o/w Multilateral	4.5	1.9	3.2	8.3
Bilateral	17.2	20.2	24.7	21.2
Non-concessional (official)	10.9	18.6	24.3	28.6
o/w Multilateral	7.5	11.2	10.3	10.4
Bilateral	3.4	7.4	14.0	18.2
Private	61.9	28.3	15.6	9.0
Short-term - borrowing	0.0	19.7	12.8	12.2
Short-term - interest arrears	0.0	0.2	2.0	7.9
Use of IMF Credit	5.5	11.3	19.0	13.7
Total	100.0	100.0	100.0	100.0
Memo item:				
Total debt	872.3	2,551.5	3,899.8	6,740.8

Note: total debt is the average annual total external debt for each period.

Source: *World Debt Tables*

Table 3.2 Private debt flows (period totals, US$ million)

	1970-75	1976-80	1981-85	1986-91
Disbursement	1,076.1	844.2	450.3	419.1
less				
Amortisation	531.1	660.8	230.2	318.8
equals				
Net disbursement	545.0	183.4	220.1	100.3
less				
Interest payments	231.0	210.2	128.9	149.5
equals				
Net transfer (49.2)	314.0	(26.8)	91.2	
Debt stock	706.9	726.1	605.9	495.8
Change in debt stock (110.1)	n.a.	19.2	(120.2)	

Source: *World Debt Tables*

reduced inflows of funds from private sources; (ii) repayment of existing obligations; (iii) debt reduction by private creditors; and (iv) assumption private debts by official agencies (who may have guaranteed the loan).

As shown in Table 3.2, all three factors have played a part in the declining importance of Zambia's external debt from private creditors. Gross disbursements have fallen from each period to the next - with sustained amortisation payments meaning that net disbursements have also fallen. However, net disbursements have remained positive throughout the period. In theory, the debt stock at the end of period t should equal the debt stock at the end of the previous period (t-1) plus net disbursements made during period t. However, in practice these two figures may differ from each other for any of the following reasons:[1]

- the end of period debt stock may be higher if the debtor has failed to meet interest payment obligations, which are then capitalised (i.e. added to the debt stock);

- the end of period debt stock will be lower if the creditor has cancelled/written off a part of the debt (debt reduction includes debt buy-back); and

- the value of debts denominated in currencies other than dollars will be subject to revaluation effects, which may either increase or decrease the value of outstanding debt in dollars in line with exchange rate movements.

- if we are considering a particular category of creditor (rather than total debt) then debt may have shifted from one to another (usually as official creditors assume responsibility for collecting private debt as part of a rescheduling agreement).

Table 3.2 shows that, for the three periods for which a

comparison may be made, the change in end of period debt stock is less than the total of net disbursements over the preceding period. Revaluation effects may a play a part here, but they are unlikely to explain the whole: *World Debt Tables* show revaluation effects to have caused a net reduction in total debt of US$ 354 million over the period 1988-92. Hence the other factors mentioned above must have also played in part in Zambia's changing private debt. As discussed in more detail below, data on debt relief are difficult to come by. *World Debt Tables* show rescheduling of debt to private creditors worth US$ 124 million in 1986 and a further US$ 248 million over the years 1990-92. There may also have been restructuring from private to official creditors, but such data are not readily available.

Zambia has also resorted to short-term borrowing (presumably from private sources) at times when other funds were not readily available. A large short-term debt was incurred in 1977 (a year prior to the start of gradual rise in official funds), and more was borrowed in the late 1980s (1988-89).

Official inflows

The slackening of inflows from private sources was more than compensated for by funds from official sources. Evidence of this fact is partly provided by the growing debt to official creditors (Table 3.1). But the debt figures give a higher weighting to less concessional inflows. Looking instead at average inflows in the different periods (Table 3.3) it may be seen that concessional loans and grants have been the most important source of foreign capital. Concessional loans have been higher than official non-concessional inflows in all four periods, as have grants for the last two periods (being the largest single category in the period 1986-91).

The non-concessional official inflows have mostly been

Table 3.3 Gross inflows (US$ millions)

	1970-75	1976-80	1981-85	1986-91
Concessional	48.6	81.5	109.3	128.6
o/w Multilateral	5.1	2.9	38.3	91.3
Bilateral	43.5	78.6	71.0	37.3
Non-concessional (official)	33.9	62.2	64.3	45.5
o/w Multilateral	22.2	47.1	48.9	40.8
Bilateral	11.7	15.1	15.4	4.8
Private	179.3	168.8	90.1	69.8
Short-term	0.0	0.0	23.8	100.2
IMF purchases	25.4	100.4	159.7	20.3
Grants	7.3	42.6	86.1	367.5

Note: grants exclude technical assistance.
Source: World Debt Tables.

from multilateral sources - both the African Development Bank and the World Bank's IBRD window. Until the last period, concessional loans were dominated by the bilaterals, but this situation has changed with Zambia's access to IDA funds and substantial drawings from the ADB's soft loan window.

Aid flows in the 1980s

Data on aid can come from DAC's *Geographical Distribution of Financial Flows to Developing Countries* or *World Debt Tables* (WDT). Figure 3.1 compares the two in nominal US dollars. There are similarities in movement, but DAC data remain above those of WDT in the late 1980s. The cause for this discrepancy is almost certainly debt relief.

WDT records debt service payments as actually made - including those paid through debt relief.[2] However, WDT does not report the "imputed inflow" that corresponds to the debt relief. Volume I of WDT does present information on rescheduling agreements (reproduced as Table 3.4) - but knowing the amount covered by debt reschedulings is not the

Table 3.4 Zambian debt rescheduling

Date			Amount
May	1983	Paris Club	$ 302 million
July	1984	Paris Club	$ 263 million
December	1984	London Club	$ 74 million
March	1986	Paris Club	$ 468 million
July	1990	Paris Club	$ 1,174 million
July	1992	Paris Club	$ 793 million

Source: *World Debt Tables* (1993-94)

same as implied relief in any given year. The hard copy (but not the diskette version) of WDT does include some data on rescheduled debt, and a comparison of these WDT figures with the discrepancy between the DAC and WDT net aid data shows the former to be considerably more lumpy - suggesting that the relief recorded in WDT is in fact spread over a number of years. Combining these two series allows the estimation of a debt relief series.[3]

Figure 3.1 shows that Zambia enjoyed growing aid toward the end of the 1970s (with a far more rapid growth to a peak in 1980 depicted in WDT than DAC), but that this aid fell away (or levelled off by DAC data) in the early 1980s - the period in which there was no real agreement with the IFIs. In 1985 and 1986 donors responded to the new reform programme with increased aid - the increase being halted by the renunciation of the programme by GRZ. After a drop in aid in 1989, aid began to boom following the resumption of reforms and has sustained high levels thereafter.

These trends are reinforced by considering aid flows in real terms (deflated by Zambia's dollar import price index), so as to show the purchasing power of the aid (Figure 3.2). The dips in the early and late 1980s are more pronounced in real terms, and the scale of the aid boom in the mid-eighties

Figure 3.1 Aid inflows, data from different sources

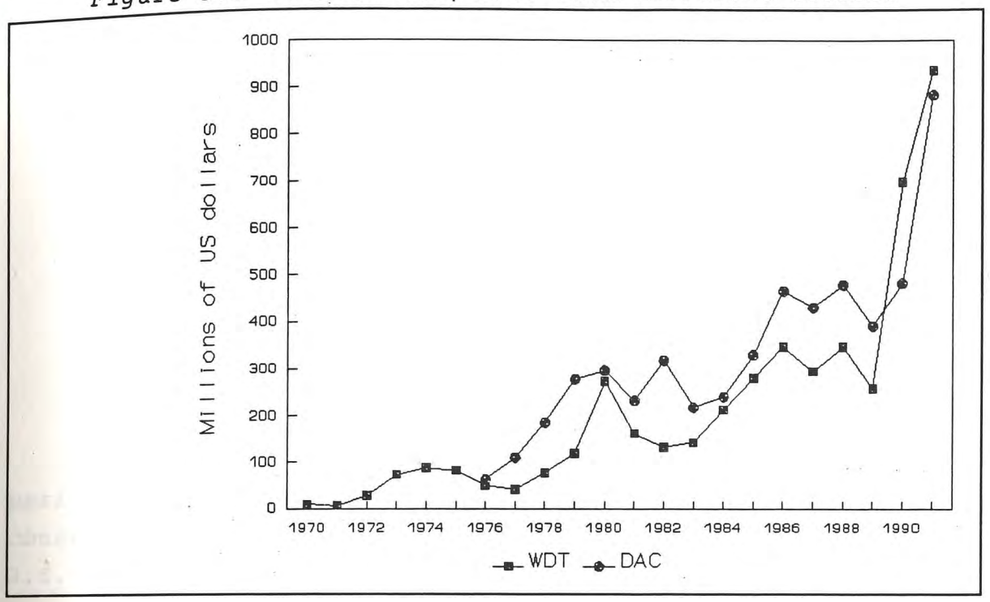
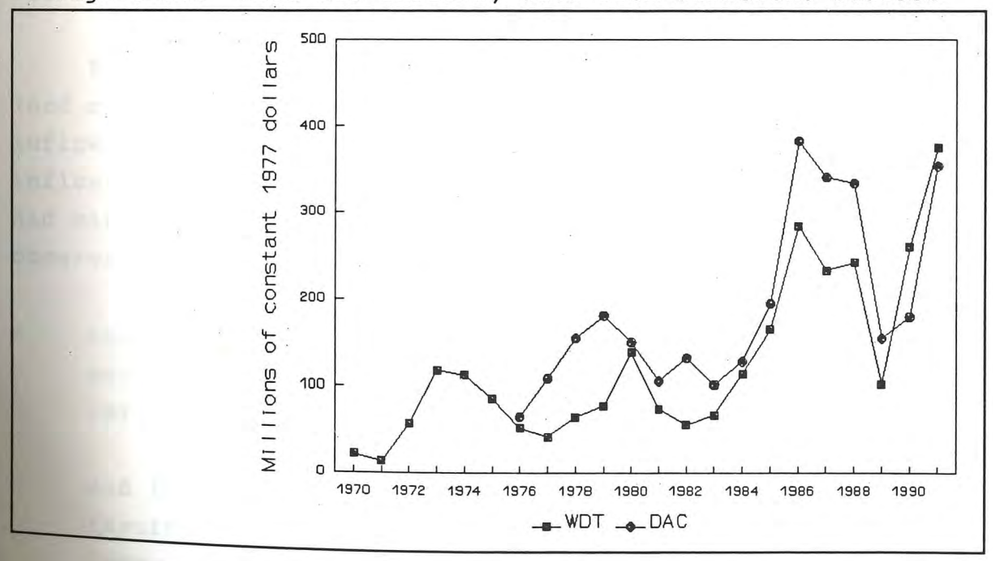


Figure 3.2 Real aid inflows, data from different sources



comparable to that at the beginning of the 1990s.

Table 3.5 Terms of long-term inflows (simple averages)

	1985-87	1988-90	1991-92
Interest rate	4.3	6.9	1.0
Maturity	29.9	15.9	39.6
Grace period	7.8	4.7	9.9
Grant element	46.7	22.6	76.2

Source: *World Debt Tables*

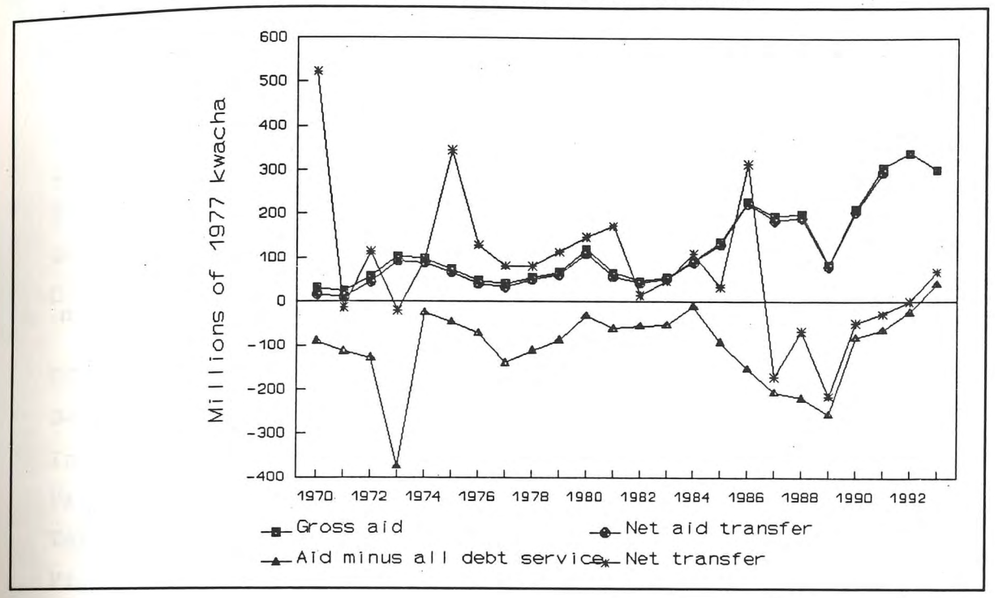
A final view on the changed nature of inflows in the period in which Zambia abandoned adjustment is given by considering the terms of long-term inflows - shown in Table 3.5. All aspects - interest, maturity and grace period - worsened so that the overall grant element fell from 46 to 22 per cent, and then improved to 76 per cent when the programme was resumed.

Figure 3.3 shows four series calculated from WDT data (and most recent years from national sources): gross aid inflows (excluding debt relief); net aid transfers (i.e. inflows minus amortization and interest payments on past aid); aid minus all debt service; and total net transfers. Several observations may be made from this figure:

- the gap between gross aid and net aid transfers is negligible, showing the highly concessional nature of aid inflows;

- aid flows alone (excluding debt relief) have been insufficient to cover debt service, especially as the latter grew in the mid-80s - suggesting that the money raised by the reform programme was less than the servicing obligations which were then to be met;

Figure 3.3 Gross and net inflows



- until the mid-80s the difference between net transfers and aid minus debt service was substantial, but the two are now very close as non-aid flows become relatively negligible.

- the picture has improved since 1990, with net transfers being positive by the last year shown (1993).

The composition of inflows

Table 3.6 shows the composition of inflows as reported in WDT and by DAC. Neither of these series are for aid flows alone. WDT data are for all long-term inflows and DAC for commitments of Official Development Finance (ODF) - i.e. all official flows for developmental purposes, whether concessional or not. However, we would not expect the discrepancies to be great in recent years as most long-term inflows have been official.

In fact, differences are evident. The share to social services is small by either series, but (unsurprisingly) smaller when looking at all flows rather than just ODF. WDT data put balance of payments support at just under 20 per cent, whereas DAC show programme aid and debt reorganisation combined to be 25 per cent of total ODF. Again this difference is in accordance with what we would expect given the different coverage of the two series: debt relief is not included in WDT's balance of payments figures (nonetheless in 1991 BOP support is about one quarter of total disbursements). The WDT show the increase in BOP support to have been at the expense of the share of inflows to infrastructure, flows to productive sectors having increased their share also.

Debt service

The structure of debt service payments (Table 3.7) reflects the above trends. Payments to private creditors dominated in the earlier period, but have fallen to less than 10 per cent in recent years. The use of IMF facilities in the

Table 3.6 Distribution of flows to Zambia

	1970-75	1976-80	1981-85	1986-91
Long-term inflows				
Social services	3.3	4.1	4.9	1.4
Infrastructure	38.0	21.6	18.6	21.2
Productive sectors	22.2	20.3	36.6	40.2
Bop support	0.0	29.6	12.2	18.8
Other	36.6	24.5	27.6	18.3
ODF Commitments				
Social services	-	-	-	13.5
Infrastructure	-	-	-	11.8
Productive sectors	-	-	-	20.8
Technical assistance	-	-	-	20.0
Programme	-	-	-	11.5
Debt Reorganization	-	-	-	14.8
Other	-	-	-	7.5

Sources: *World Debt Tables* and DAC *Geographical Distribution of Financial Flows to Developing Countries*

1970s shows up as over one third of repayments during 1981-85 being to the Fund. The highly concessional nature of concessional inflows mean that they account for a very small (and falling) share of debt service (less than 5 per cent). But, despite the importance of these concessional funds, the burden to Zambia of servicing the debt is growing. This fact is shown both by the increased outflow in debt service in each period, and the remorseless rise of the debt service ratio.

The Zambian government's own projections offer little cause for optimism for future debt servicing capability. The projections shown are based on some optimistic assumptions; mainly: all arrears eliminated by 1995 (the largest part being the elimination of IMF arrears in that year under the RAP); growth in non-traditional exports of 10 per cent a year and

Table 3.6 Debt service payments (per cent)

	1970-75	1976-80	1981-85	1986-91
Concessional	5.4	4.7	3.0	1.9
o/w Multilateral	3.6	2.1	1.3	1.3
Bilateral	1.8	2.6	1.6	0.6
Non-conc. (official)	5.4	16.5	20.1	13.5
o/w Multilateral	3.4	11.0	14.7	12.2
Bilateral	2.0	5.5	5.4	1.2
Private	83.7	66.4	21.2	8.9
Short-term	0.0	0.0	0.0	6.4
IMF charges	5.5	12.3	35.0	7.2
Memo items:				
Total debt service (US$m.)	910	1,311	1,691	5,252
Debt service ratio	14.9	21.2	32.2	77.1

Source: World Debt Tables.

receipt of the required DFI to maintain copper export levels, a modest upward trend in the copper price, and that the aid inflows to fill the gap are highly concessional. But even with these assumptions, the debt service ratio remains at high levels - still being over one third in the last period (when the debt stock has been reduced by only US$ 2 million, to just under US$ 5 million). However - as the figures show - the debt service ratio is not irrelevant. The optimistic export projections yield a trade surplus toward the end of the projection period but the adverse service balance leaves the current account in deficit throughout the projection period. That is, export earnings are insufficient to meet forex requirements excluding debt service. It might reasonably be said that debt service will all be paid by inflows.

The required levels of inflows remains very large, particularly in the first period during which it is planned to

Table 3.5 External account projections, 1992-2008 (period averages)

	1992-95	1996-2000	2000-08
Debt service	645	489	500
Arrears reduction	498	0	0
Import requirements	1,137	1,261	1,360
Services (net)	(221)	(241)	(286)
Forex required	2,501	1,991	2,146
Exports	959	1,047	1,374
DFI	49	147	118
Required aid inflow	1,493	797	655
o/w debt relief	745	32	12
other	748	765	643
Memo item:			
Debt stock	6,743	6,591	5,733
Debt service ratio	67.4	46.5	37.6

Note: changes in reserves and private current transfers (both of which are negligible) are ignored. Services exclude interest payments. Debt service ratio excludes arrears reduction.

Source: Government of the Republic of Zambia (1994).

eliminate arrears. In the later years, inflows of US$ 650-700 million a year are required (equal to about US$ 70 per person). These are high levels of aid for a long period - and at the end it is not clear that the requirement for aid will have been significantly reduced. Debt relief features prominently amongst these required aid inflows. Assuming that this relief is forthcoming - and that future inflows are highly concessional - then the need for relief is reduced, and the majority of aid is shown in the projections to be project aid. As is evident from the earlier discussion, the reversion to project aid is a change from recent practice.

3.3 Conclusions

At the start of the 1990s Zambia's total external debt exceeded US$ 7 billion - that is about $ 800 per person (over twice the average per capita income). In the early 1970s the majority of Zambia's debt was from private sources, but now over 90 per cent is from official creditors, just under half of the total being from the IFIs. Aid to Zambia has peaked three times. There was growing support up to 1980 as the crisis deepened, but this support fell away given the government's reluctance to embark on an adjustment programme. Aid grew from 1985-87 but fell again when the new programme was abandoned (or levelled off, according to which source is consulted). High levels of aid have been enjoyed since 1990. A high proportion of aid to Zambia has been balance of payments support: both import support and debt relief.

Despite generous debt relief and settlement of arrears there has been little reduction in the size of this debt: nor can rapid reduction be expected given the size of the problem and the effective rescheduling of IMF funds through the RAP. GRZ's own optimistic projections show that the current account (excluding official transfers and interest payments) will remain in deficit - that is, Zambia's export earnings will be insufficient to meet her own recurrent requirements so that external finance of the order of US $600 to 700 million a year is needed to meet debt obligations for the foreseeable future.

Notes to Chapter 3

1. The hardcopy of *World Debt Tables* includes a table of debt-stock reconciliation for total debt for recent years - but these tables often include a substantial residual unexplained by the categories listed (interest capitalisation; debt forgiveness or reduction; and revaluation effects).

2. An alternative convention, employed in the Zambian balance of payments, is to record scheduled debt service and then include arrears as a financing item. Unfortunately the Zambian data do not permit a separation of debt relief from arrears.

3. Confirmation that the estimated series was at least along the right lines was provided by fitting the data into the external balance equation (see chapter 4), as the discrepancies were greatly reduced once debt relief was allowed for.

CHAPTER 4

THE MACROECONOMIC IMPACT OF AID FLOWS TO ZAMBIA

4.1 Introduction

Previous chapters have examined the poor performance of the Zambian economy since independence. In this chapter we return to address the question of the role of aid, and why it has been unable to prevent this decline. Aid's lack of apparent success has not been because it is macroeconomically insignificant - though aid flows averaged only 2-4 per cent of GDP in the 1970s, they increased to an average of over 10 per cent in the 1980s, peaking at over 25 per cent. In the 1990s aid inflows have been over one third of GDP.[1]

Aid's contribution to a country's growth have conventionally been seen in terms of its contribution to imports and investment. In Part 4.2 an accounting framework is presented to capture the major sources of finance for each of these, and to raise questions about the extent to which aid has contributed to or detracted from them. However, the channels for aid's impact have changed, partly as project aid has become more flexible allowing for recurrent and local costs, but also as balance of payments support has played an increasingly important role. In Part 4.3 the effects of different types of aid are considered.

Econometric estimation, presented in Part 4.4, provides the basis for discussion of the behaviourial impact of different types of aid in Part 4.5. The impact on social development is discussed in Part 4.6. Part 4.7 concludes.

4.2 Putting the data in the accounting framework

As explained in detail in the methodological guidelines (White and Luttik, 1994), the national accounting identity:

$$Savings\ gap = Current\ account = Capital\ account \quad (4.1)$$

is a useful starting point for the discussion of aid's impact on macroeconomic aggregates. In this section this framework is applied to the Zambian data in order to identify the key areas for further analysis.

Aid and imports

More detailed versions of equation (4.1) may be written in a variety of ways. For the analysis of the Zambian data, the components of the current and capital accounts have been identified as:

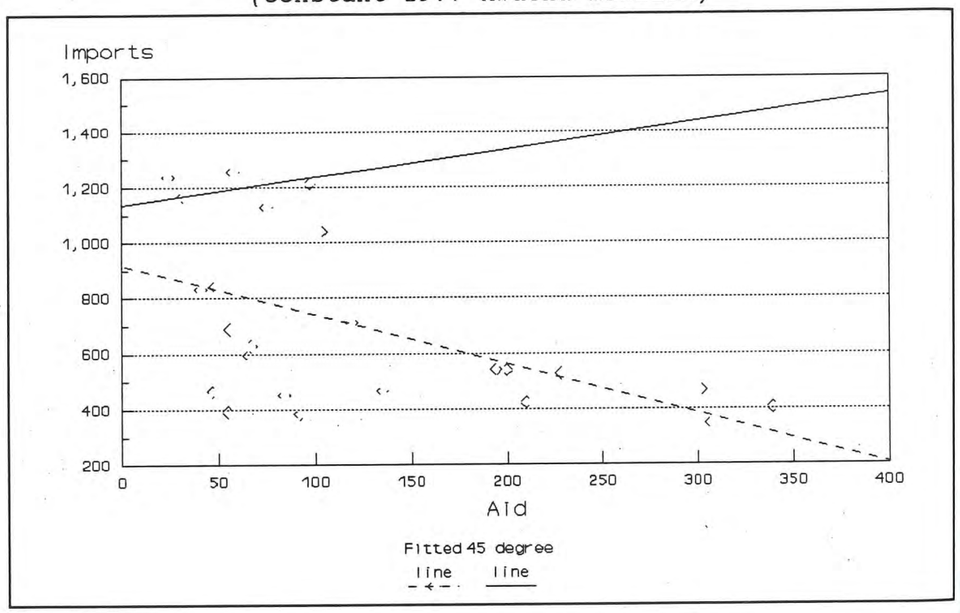
$$M = AID + DREL + OFF + X + OFP + PCT + PRIV + DFI + IMF + STL + dR + EO - DS \quad (4.2)$$

where X and M are exports and imports of goods and non-factor services respectively; AID is aid (grants and concessional loans - debt relief is separately identified as DREL); OFF is non-concessional official loans; IMF purchases from the IMF; PCT private current transfers; DS debt service (amortization plus interest payments); OFP other net factor payments from abroad, PRIV private capital inflows (except direct foreign investment, DFI, which is separately identified); STL is short-term borrowing; dR the change in reserves; and EO errors and omissions.[2] (A positive dR is a reduction in reserves, that is an "inflow" of capital to the capital account). All inflows (other than DFI) are in gross terms, with repayments being included in the debt service term.

As shown by equation (4.2) we expect that, *ceteris paribus*, a rise in aid will lead to a one-for-one rise in imports. This statement can be shown graphically by plotting imports against aid for the first year for which data are available (1970) - future imports will lie along a 45° line

drawn through that point. However, in practice we do not expect other things to be equal - Figure 4.1 shows that in the Zambian case they most certainly have <u>not</u> been so. Whilst aid flows were stable in real terms in the 1970s and have risen since the early 1980s (with a dip in 1989), imports have displayed a rather different pattern. Particularly the spectacular fall in the 1970s.

Figure 4.1 Aid and imports, 1970-1993
(constant 1977 kwacha million)



Clearly aid has not been associated with one-for-one increases in imports. The simple regression of imports on aid gives a significant negative coefficient of -1.79 (t-statistic = -3.02) rather than a coefficient of unity.[3] This fact leads directly to confront two questions. First, which of the components listed in equation (4.1) have been most responsible for the persistent decline in real imports? Second, are the trends undermining Zambia's import levels in any way related to aid inflows (so that the lack of a direct link between aid and imports is <u>causal</u> rather than accidental)?

The simplest starting point to answering the first question is to look at correlations between the imports and the various components on the right hand side of equation (4.2). A significant positive correlation suggests that movements in that variable are strongly related to changes in imports, and so may be a main contributory factor in the decline of imports. It has already been reported that aid as a significant <u>negative</u> correlation with imports (the simple correlation coefficient is -0.52). Only two variables have a significant positive correlation with imports: these are exports (coefficient = 0.89) and private current transfers (0.55).[4]

An alternative approach to trying to identify the factors behind the decline in imports is to apply a decomposition analysis to equation (4.2). Such analysis decomposes the sources of change in a variable to its component parts. For example, if

$$y_t = x_t + z_t \qquad (4.3)$$

then

$$\hat{y}_t = \left(\frac{x_{t-1}}{y_{t-1}}\right)\hat{x}_t + \left(\frac{z_{t-1}}{y_{t-1}}\right)\hat{z}_t \qquad (4.4)$$

where

$$\hat{y}_t = \frac{y_t - y_{y-1}}{y_{t-1}} \qquad (4.5)$$

That is, a component's contribution to growth depends both in its share of the aggregate <u>and</u> the amount by which that component changes.

Decomposition analysis confirms the importance of exports in the downward trend of Zambia's imports. (As shall be discussed in more detail below, it is exports deflated by the import price index - that is, the capacity to import - which is being discussed here). Unlike many developing countries,

Zambia has had a positive trade balance in many years.[5] Over the period as a whole, the average ratio of exports to imports is unity - and in each year the ratio has typically fluctuated in the range 0.75 to 1.25. Hence, in the decomposition of sources of change in export volume, any change in exports is more-or-less fully passed on as an equivalent percentage change in imports. Furthermore, as shown in Table 4.1, the changes in exports have typically been similar to those of imports - notably the substantial declines until the early 1980s.

Table 4.1 Decomposition analysis for imports (period averages)

	1970-75	1976-83	1984-89	1990-93	1970-93
	Percentage changes				
Imports	0.0	-11.7	3.1	1.9	-2.9
Debt service	25.8	0.2	29.2	-4.3	12.6
Exports	-11.2	-5.5	2.6	7.0	-2.4
Private inflows	102.2	-7.4	74.7	-12.4	37.0
Aid	32.9	3.3	19.0	49.0	21.8
Debt relief	-	-	-	24.6	-
	Shares (per cent)				
Debt service	17.2	22.2	62.6	80.5	42.1
Exports	113.4	94.4	104.6	99.9	100.7
Private inflows	20.7	11.3	7.5	3.5	9.6
Aid	5.6	10.1	31.3	71.6	25.5
Debt relief	0.0	0.0	30.8	37.5	14.6

Note: - not available (as value of zero in previous period).
Source: calculated from project database.

The fact that Zambia has been able to pay for imports out of her own export earnings raises the question of "what has the aid been for?". There are, of course, two main uses of foreign exchange: imports and debt service. Has aid just been used for debt service? In an accounting sense the answer to this question is undoubtedly "yes". Exports pay for imports

and capital inflows cover the debt-related outflows (and the deficit in other current account items). However, the term "in an accounting sense" must be emphasised, as the possibility remains that imports would not have been so high in the absence of aid (as, if there had been no aid, export earnings would have to been used to service the debt). These issues are discussed further below.

As would be expected, private inflows have been of decreasing importance in financing imports, and aid of increasing significance. However, private inflows never appeared such a significant part of the whole that their decline underlies the fall in imports to any substantial degree. Besides, as was seen in the previous chapter, the drying up of private inflows was more than offset by increased official flows. Equally, it is unsurprising that there is little link between aid and aggregate imports in the earlier period, since aid flows contributed only a small share of foreign exchange. But by the mid-eighties, aid had become a quantitatively significant contributor of forex so that changes in aid may be expected to show up in changes in imports - unless there are automatic offsetting mechanisms.

Finally, debt service has come to be nearly as an important a use of forex as imports in recent years. The rise in debt service payments is clearly also an important factor in the unavailability of forex for imports over the period as a whole, particularly in the mid-1980s. Before going on to analysis these issues in more detail we first apply the accounting framework to the investment-savings balance.

Aid, savings and investment

Prior to independence Zambia was a capital exporter, making payments to the Federation, amongst other outflows. These payments required that Zambia run a trade surplus, and also that it saved more than it invested. Figure 4.2 shows that the savings rate was indeed higher than that for

Figure 4.2 Savings and investment (as a per cent of GDP)

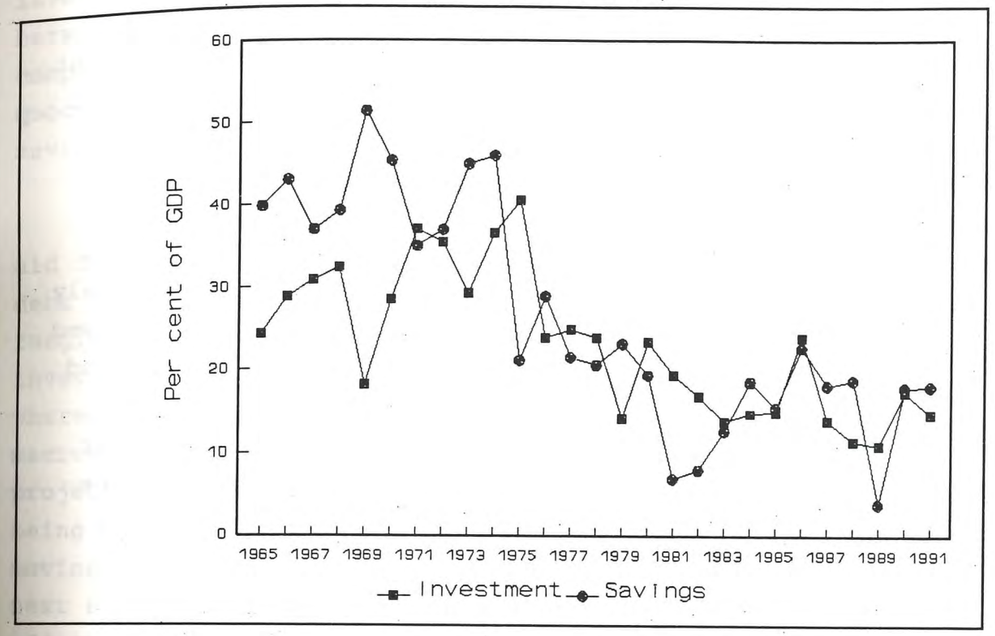
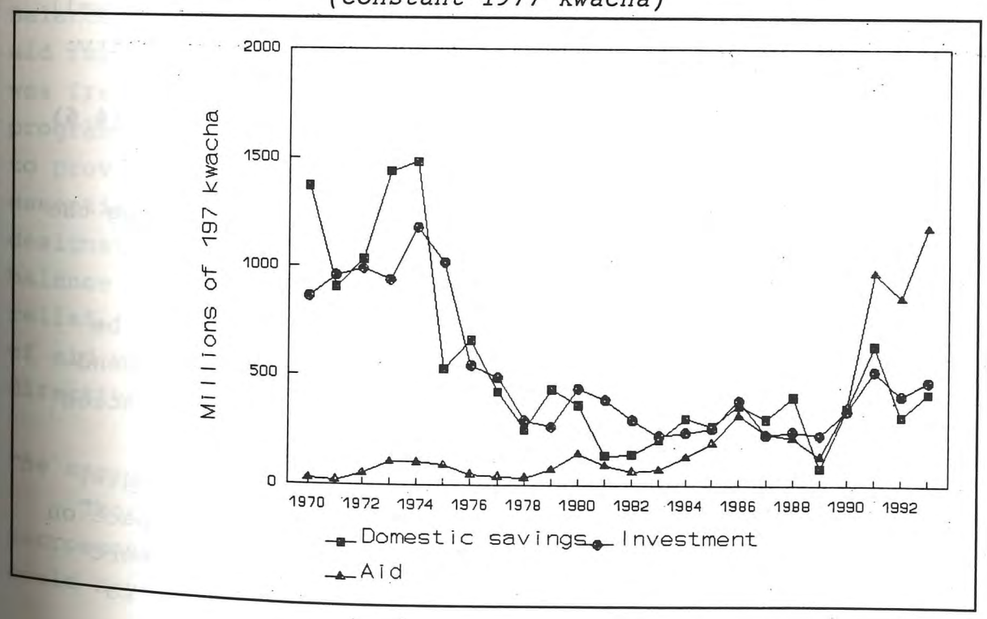


Figure 4.3 Aid, savings and investment (constant 1977 kwacha)



investment until the mid-seventies, and the two rates have fluctuated around one another there since. Clearly also both rates suffered a sharp fall with the copper price collapse, from which they have not recovered. The decline in investment and savings is also evident from Figure 4.3, which shows real aid, domestic savings and investment (all deflated by the investment deflator).

The basic story told by these figures for the period up to he mid-eighties is straight-forward. Investment is largely financed by savings. When income fell investment was allowed to fall, but consumption levels maintained. Lower income and constant consumption imply that savings must fall. To the extent that aid or other inflows increased in any particular period they may appear to displace savings - but in fact the causation starts with the lower income and the government's desire to preserve consumption.

The situation described in the preceding paragraph changed with the mid-eighties aid boom, when real aid equalled investment, and then greatly surpassed it with the 1990s increase in aid. The sum of aid and domestic savings was well in excess of the level of investment. So, from the identity:

$$I = AID + DREL + OFF + GDS + OFP + PCT + PRIV + DFI + IMF + STL + dR + EO - DS \quad (4.6)$$

factors other than investment must have been accommodating the aid inflow.

Comparing equation (4.6) with equation (4.2) it can be seen that the two have all items in common on the right-hand side, except for the exports in the external balance equation being replaced by domestic savings (GDS) in the savings-investment identity. Thus changes in these common elements, such as debt service, simultaneously undermine aid's impact on both imports and investment. On the other hand, the export and savings terms appear as independent of one another, so

that with an aid increase, say, imports may rise but investment fall. Whilst there is no direct accounting link between the two, there may be a link through import composition. If the rise in imports were to be of consumption goods - signifying a rise in consumption - then domestic savings may fall.

These considerations explain the lack of a link between aid and investment during the two aid booms. In particular, debt service rose. This fact need not of course reflect fungibility. The notion that aid should support imports and investment rests upon the conventional view of project aid, whereas much aid is now for balance of payments support, whose macroeconomic effects may be quite different. Moreover, project aid has itself become more flexile in recent years - being available for both local and recurrent costs. Before moving to the behaviourial analysis of aid's macro impact, the next section of this chapter considers the macroeconomic effects of different types of aid.

4.3 The macroeconomics of balance of payments support

Balance of payments support began as rapid disbursing form of aid for countries having problems absorbing project aid, and was frequently viewed as a "residual element" in the aid programme (de Vlyder, 1993: 9). The purpose of this aid was to provide budgetary support or alleviate the forex crisis for essential supplies. In the early 1980s this assistance was designated as import support. But as the debt crisis grew balance of payments support was also made available for debt relief. The macroeconomic issues surrounding these two types of aid vary (partly since aid flows for debt relief may not directly involve the recipient at all).

The macroeconomics of debt relief

There are two important issues in discussing the macroeconomic effects of debt relief: (i) whether the debt would have been paid in the absence of the relief and (ii) if

there is a debt overhang. These two aspects are shown together in Table 4.2.

Table 4.2 The macroeconomic effects of debt relief

		Would recipient pay debt in absence of debt relief?	
		No	Yes
Does the relief alleviate debt overhang?	No	No effect	Increase in free forex
	Yes	Stimulate investment	Increase in free forex and stimulate investment

If the recipient would not have paid the debt in the absence of the relief, then the relief does not directly contribute any new resources - if properly accounted, the debt relief flows in on capital account (if a loan) or current account (if a grant) and the inflow is immediately offset by an equivalent outflow on either or both capital account (for relief on principal payments or capitalised interest arrears) and current account (for relief on interest payments). On the other hand, to the extent that the recipient would have paid the debt, then the relief is equivalent to free forex (since money that would have been used in payment is now available for alternative uses).[6]

Debt overhang is the notion that investment is constrained by high levels of debt, a mechanism which can operate through several channels (see Borensztein, 1990; and Serven and Solimano, 1992: 107). First, considerable uncertainty surrounds just how burdensome the debt burden will be, since fluctuations in interest rates, the exchange rate and the terms of trade all affect the size of the transfer necessary and, therefore, the trajectory of government's fiscal and monetary policy. Second, a highly-indebted country will be credit constrained through lack of access to private

international capital. Third, repayment obligations act as a foreign tax on current and future income. And, fourth, the likelihood of meeting debt obligations is greater the lower are those burdens[7] - so the government has less incentive to abandon stabilisation and adjustment programmes conditional upon meeting debt service obligations. Hence, reducing the debt burden may stimulate both foreign and domestic investment in the recipient country, even if the debt relief itself directly provides no additional funds. Aid will <u>not</u> alleviate debt overhang either if there is no problem of overhang in the first place, or if there is a problem but the relief is insufficient to eliminate it.

If a country is in the top left hand-corner of the matrix shown in Table 4.2 then the debt relief is a mixture of a rescheduling device and softening the terms of past lending; indeed the expression "retroactive terms adjustment" (RTA) has been applied to such monies. They have also been called "unintentional past aid" (Faber, 1992) - since flows which did not qualify as aid at the time on account of having an insufficiently high grant element would now qualify as aid if the present value of actual repayments (rather than those initially scheduled) were to be used in the calculation.[8]

Where is Zambia to be placed in Table 4.2? With regard to debt overhang, it was established in the previous chapter that even the high levels of relief and other inflows projected as required by GRZ leave Zambia with a high debt burden - such as cannot be serviced from Zambia's own resources. Hence, if there is a problem of debt overhang, the debt relief currently being received will not alleviate this problem - since there is always the prospect of some time in the future when GRZ will become responsible for the external liabilities. This argument would suggest that Zambia should be placed in the top row of Table 4.2.

But there are also policy effects which are not usually

considered amongst the effects of debt relief. For most donors, conditionality is placed on receipt of balance of payments support. If we believe that Zambia would not implement adjustment policies to the same extent in the absence of this aid and that the policies are conducive to growth, then the debt relief does have a beneficial growth stimulation effect quite apart from the direct financial effects. It was argued in Chapter 2, that conditionality has indeed had a beneficial impact on policies - so considering the problem of debt overhang from this angle suggests that aid has helped to relieve it.

How much debt would Zambia pay in the absence of the debt relief? The probable answer is that it would pay some but not all of it. How much is "some"? As have other countries, GRZ previously restricted debt service to 10 per cent of export earnings. If such a policy had been applied over the period 1985-93, debt service (in current Kwacha) would have been about K 90 billion - debt relief over this period is estimated at over K 300 billion. That is, if Zambia had pursued such a policy the country would have paid under a third of the debt service which was actually paid by the debt relief. That is, two thirds of the debt relief do <u>not</u> represent additional resources, since the obligations would not have been met in the absence of the relief. It might be argued that the estimate of one third is too high. Zambia is a foreign exchange constrained economy, all of whose forex is required for essential imports. So, in Table 4.2, Zambia should be placed on the bottom row, lying astride the two columns - but closer to the left than the right.

The macroeconomic effects of import support

The use of aid for import support raises the following macroeconomic issues: (i) how does such aid affect the composition of imports (including the issue of categorical fungibility)?, and the macroeconomic consequences of the different categories of goods (consumer, intermediate and

capital); (ii) the extent to which aggregate fungibility frees up forex for other uses (capital flight, reserve accumulation etc.); (iii) whether import-support financed goods displace the market for domestic production; and (iv) the collection and use of counterpart funds. Each of these issues is now discussed in turn.

<u>Import composition</u>

Import support may take one of two forms: administrative and market-oriented. Administrative schemes allocate the forex, usually by committee, to applicants according to criteria agreed between donor and recipient. Alternatively, the donor may allocate import support funds for a particular commodity (e.g. fertilizer), often with agreed channels for distribution. Developing countries facing a foreign exchange constraint typically have developed elaborate administrative mechanisms for the allocation of available forex - FEEMAC is an example of such a scheme - and administrative import support is often an extension of such schemes.

Market based schemes (usually called Open General Licence, OGL) distribute the forex *via* market mechanisms (either an auction to end users or selling the forex to commercial banks/bureaux who sell to imports at a market-determined exchange rate). Donors may place some restrictions as to which goods may be imported with their import support. (Historically there were "positive lists" of approved goods, but these have been replaced with ever shorter "negative lists" of prohibited goods).

A common criticism of import support schemes is that the aid pays for "non-essential" luxury imports which do not contribute to recipient growth. One agency official in Lusaka commented that OGL money is used for "beer and biscuits"; others point to the increasing number of Mercedes and BMWs seen in African capitals and say "that's OGL money". In fact, this criticism may be one of three arguments:

- corruption - malpractice in administering the import support allow it to be used for luxury goods (e.g. Mercedes);

- categorical fungibility - because of the import support government can now allow free forex to be used for luxuries (whereas in the absence of the aid it would have been used for essentials);

- opposition to the negative list - if import support is used for Mercedes this fact must arise either from corruption or fungibility, since luxury vehicles are on the negative lists of countries operating OGL schemes; but if the argument is against "beer and biscuits" this is an argument against an OGL system which is functioning entirely in accordance with its rules, since these items are not prohibited uses of the funds.

Of course it is not desirable that import support funds should be misused so to enable the powerful to import luxury goods (or even to give preferential access to certain groups to import allowable items). Experience in Zambia and elsewhere shows that administrative schemes are far more likely to be open to such abuses: being administered by government departments in which rent-seeking has become a fact of life, and which are very open to the workings of the patronage system. There is no evidence that donor involvement in the administrative process enables it to escape the inefficiencies of such schemes described in Chapter 2 above. By contrast, the anonymity of the market mechanism is more likely to avoid interferences. However, the "invisible hand" is an ideal type for many developing countries, especially in credit markets which have experienced years of government intervention in credit allocation, including directing credit to favoured individuals or groups on advantageous terms. A well-functioning OGL system requires the independence of the banking sector from government.

Despite the greater potential for corruptibility, some donors prefer the administrative system because it allows (ignoring for the moment the possibility of fungibility) them to be sure that the funds to be used for imports seen as necessary for the recipient's growth. As a Japanese official in Lusaka put it, the funds should be used to support the "three pillars" of the Zambian economy (mining, manufacturing and agriculture). Three counter arguments may be made against this view: (i) the apparently inherent inefficiencies of the allocative system; (ii) analysis of import composition under OGL and similar systems does not show a massive surge in consumer imports; and (iii) if consumer goods act as incentive goods then these goods may well stimulate growth.

Even if not corrupt, administrative allocation may be inefficient. The inefficiency may stem either from the difficulty of "picking winners" or by deliberate use of import support to aid ailing parastatals. These problems in the Zambian context were discussed in Chapter 2. Elsewhere, a World Bank report on the administrative allocation of foreign exchange in Tanzania commented that a purely random allocation of the forex amongst firms would have yielded a more efficient outcome (World Bank, 1984b).

Since the use of donor funds for consumer goods is the most widespread criticism of import support schemes there has been surprisingly little analysis of this issue. Before turning to the Zambian case, it is worth noting the results of analysis an evaluation of Tanzanian import support, which was able to examine the types of goods imported with Norwegian OGL. The authors summarise their findings as follows:

> ... about a third goes to each of the manufacture of incentive goods and to support other industrial production. The remaining third splits roughly equally between agriculture, transport and miscellaneous items.
>
> (Doriye *et al.*, 1993: 33)

No data are available for the recent experience, but we can analyse the period of the auction, when the "luxury goods" argument was made much of in the press and, eventually, GRZ in justifying the return to the allocative system. However, the data suggest a rather different story.

Tables 4.3 and 4.4 show the pertinent data for the period of the auction. Table 4.3 shows that the share of auction funds being used for consumer goods was small indeed - only 6 per cent. The vast majority appears to have been used for intermediate and capital goods. Of course, the presence of categorical fungibility may have allowed free forex to be diverted from intermediate and capital goods and into consumer goods. But this possibility appears not to have occurred in practice - Table 4.4 shows that the share on consumer goods remained more or less stable throughout the three periods shown (in fact being slightly higher in the non-auction periods). The stability of the share of consumer imports is despite the introduction of own-funds imports, which might well be expected to be consumer goods.

A substantial shift in import composition did take place from intermediate to capital goods, which is contrary to expectations. This oddity may arise from a classification problem. Many goods needed to utilise spare capacity - generators, particular items of machinery etc. - may well be classified as capital goods, even though they are having the intended impact of import support: a single machine may be necessary in order for a whole plant to be operational.

Although the composition of imports did not exhibit adverse behaviour, what of import volume? Did aggregate fungibility allow the aid flows to be used for other activities.

Aggregate fungibility

Much aid to Zambia in recent years has been debt relief,

Table 4.3 Allocation of auction funds by end-use

	US$ million	Per cent
Consumer	20.6	6.0
Intermediate	159.2	46.6
Machinery and equipment	53.6	15.7
Miscellaneous goods	14.9	4.4
Services	53.5	15.9
Allocation to banks	40.3	11.4

Source: World Bank (1993: 142).

Table 4.4 Import composition, 1980-90

	1980-84	1985-87	1988-90
Total (K million)			
Consumer	188	936	3,694
Intermediate	546	2,245	6,483
Capital	212	1,886	7,163
Growth (per cent increase over previous three year period)			
Consumer		398.1	294.5
Intermediate		311.5	188.7
Capital		790.0	279.8
Shares (per cent of total imports)			
Consumer	19.9	18.5	21.3
Intermediate	57.7	44.3	37.4
Capital	22.4	37.2	41.3

Note: 1980-84 is the three years 1980, 1981 and 1984.

Source: World Bank (1993, Statistical Appendix: Table 17).

and not intended to increase imports. In fact, as discussed above, if Zambia would have paid the debt in the absence of the relief, then it is the debt relief which is fungible - being potentially used instead to increase imports.

The decomposition analysis in section 2.2, suggests that the increase in imports in the period 1984-89 was largely covered by a higher capacity to import. Debt service grew markedly in this period, and consumed aid, debt relief and an increase in private inflows. In the most recent period, 1990-93, growth in exports has been more than enough to pay for higher imports. Aid again covered debt service and compensated for lower private inflows. Given that not all aid was intended for debt service - at least some was meant for imports - there is then the possibility that aid may have undermined export performance through Dutch disease effects; this possibility is pursued in Part 2.3.

Deindustralisation and the displacement of domestic production

If the economy is facing a demand constraint then the provision of aid-financed imports may displace domestic demand. This displacement effect may be offset by demand-generation effects of the aid inflow. The formal analysis of displacement effects (in Chapter 5 below) shows that they are most likely to come from balance of payments support, as their impact on domestic demand is less than other types of aid. The concern has been particularly about the impact on the manufacturing sector.

Two further points can be made here. The analysis of the use of import support funds - both in Zambia and Tanzania - suggest that they <u>are</u> supportive of production rather than displacing it. But there will be some sub-sectors where the flood of imports can be shown to be displacing domestic production. It must be remembered, however, that industrial restructuring - including closure of some plants - is a part of what adjustment entails. The real concern is to foster the

growth of competitive productive opportunities and activities sufficiently quickly to absorb labour laid off from existing employment.

Counterpart funds

Import support funds are intended to be a grant to the recipient government, but not to the importer. In return for the forex provided to pay for the importers, the importer is expected to pay countervalue ("cash cover") in local currency to government. There are four controversial aspects of counterpart funds: (a) the exchange rate to be used in calculating the importer's cash cover obligations; (b) collection rates; (c) use of countervalue by government; and (d) potential inflationary impact of the funds.

a) Choice of exchange rate

Many developing countries have dual, or even multiple, exchange rate regimes. Import support funds will normally be sold at or close to the official rate - thus making the imported goods cheaper than if the forex had to be purchased on the open market. This implied subsidy opens the system up to rent seeking behaviour, and the possibility for the government to support the ailing parastatal sector. Some donors have therefore expressed concern that import support may inhibit, rather than encourage, restructuring.

A point often not appreciated is that donor accounting requirements and restrictions on the use of forex provided as import support can drive a wedge between the market and official rates. The wedge may arise either because of the additional transaction costs associated with procuring import support forex or because of the market segmentation created by restrictions on use. The demand for free forex (that which may be used importation of any goods and services or for capital account transactions) will exceed that for forex which may only be used for a certain set of goods. Thus the market clearing exchange rate for the former category of forex may be

higher than for the latter (if the share in total forex use of imports permitted under import support is less than the share of import support in total available forex). This argument provides one possible reason why black market premia have often been resilient in the face of substantial devaluations of the official rate.

In Zambia the exchange rate system has been unified since December 1992, with the official rate calculated as the weekly average market rate. (In fact, there was initially a 15 per cent premium on the OGL, but this premium was soon abolished). So in the most recent period that has not been a problem of the choice of exchange rate. During the 1985-87 adjustment episode, a part of import support was channelled through the auction - the rate from which led the way in setting much needed devaluations of the exchange rate (as the auction rate was used for all official transactions).

b) Collection of counterpart funds

Recipients of import support may receive a "double subsidy". In addition to the subsidy implicit in the choice of exchange rate, companies have often not paid the cash cover anyhow, or at least not in full. In countries in which governments are trying to collect payments arrears of counterpart funds the issue also arises of the exchange rate used to value the arrears (given the rate of depreciation in some countries, this decision can affect the amount to be paid very substantially).

Administrative schemes are more prone non-payment of countervalue for a variety of reasons: (i) they are more open to corrupt practices; (ii) governments have used them to assist parastatals whose financial state that does not permit them to pay; and (iii) the government does not have the administrative machinery to enforce collection. Under market systems, the commercial bank pays the government (*via* the Central Bank) for the forex up front, and then it is their

responsibility to collect payment from the importer as part of the commercial transaction.

These problems never seem to have been serious in Zambia, which has avoided prolonged experience of donor-supported administrative forex allocation. In the mid-1980s the auction system avoided collection problems. When the adjustment programme was resumed an OGL system was out in place. As indicated, these market-based systems are far less prone to countervalue collection problems than are administrative schemes. (The Japanese are said by some to be having problems in this regard with their administrative system).[9]

c) Use of counterpart funds by government

Counterpart funds are raised either by the sale of forex or commodities - debates surrounding the problems of counterpart funds initially arose over PL480 from the United States in the 1960s, particularly in India which was the largest recipient of such aid. Initially a part of the food aid was sold to the recipient in return for local currency for the US' own use in the country (e.g. mission costs) - the balances of such funds rapidly accumulated, so an increasing part was loaned or granted to the government for developmental uses. Over time, it became standard practice to allocate the counterpart funds, usually held in separate accounts, to agreed development projects.

However, that practice is now frowned upon as "double tying". The use of the foreign exchange is tied to particular uses (even if only through a negative list), and accounted for as the use of the donor funds. Hence it is double tying the same money if the donor then also specifies the use of the counterpart funds. The practice is contrary to OECD Guidelines and SIDA's own *Principles of Import Support*, but still engaged in by some donors. One reason for not wanting to double tie the funds in this way is the perceived inflationary impact which may result - sometimes said to be a

result of "spending the same money twice".

Discussion with aid agency officials in Zambia shows a large degree of flexibility on their part about the handling of, and accounting for, counterpart funds, so that problems of double tying do not arise.

d) The inflationary impact of counterpart funds

The possible inflationary impact of the expenditure of counterpart funds was a central part of the Indian debate, and has now re-emerged in the African context - despite the fact that the consensus reached in the Indian debate was that there had not been an inflationary impact and the theoretical and empirical arguments advanced for a similar conclusion in the African context (Roemer, 1989; and Bruton and Hill, 1990).

As demonstrated most clearly by Bruton and Hill, we would not in general expect the use of counterpart funds to be inflationary. The payment for the forex by the importer to the government is a reduction in the money supply - the subsequent expenditure of these funds restores the money supply to its previous level - hence there is no overall impact on the money supply. There are a number of caveats to this simple argument. An important one is that the cash cover may not be collected, but if there is double tying the donor may still require government expenditure to take place.

But increasingly - and as is the case for all donors in Zambia - donors do not require any incremental expenditure for their counterpart funds. Rather the funds should be set against expenditures which would have occurred anyway (or even *ex post* against expenditures which have already been made). This practice means that the funds are in practice reducing the need for deficit funding - a usage of counterpart funds explicitly endorsed by SIDA. Hence the counterpart fund procedure has a deflationary impact.

It therefore seems that spending counterpart funds is <u>not</u> spending the same money twice. Nevertheless, the deflationary impact of not requiring incremental government expenditures in response to collecting the cash cover is helpful in restraining inflation when there are other pressures on monetary growth.

As has just been indicated, donors in Zambia do not require incremental expenditure for their counterpart funds. Moreover, since the adoption of the cash budget in January 1993 the counterpart funds are in "blocked accounts", i.e. they do not constitute a part of the cash budget and so cannot be spent.[10]

Roemer (1989) argues that any inflationary impact of counterpart funds may be further undermined if the economy is foreign exchange constraint. His argument is that in a forex constrained economy a substantial production multiplier may be expected to be associated with any relaxation of that constraint. The consequent increase in output will, through the quantity equation, exert a downward pressure on the price level. We have argued that import support has had a beneficial role in stimulating production in Zambia, so that these effects may also be expected to be present.

4.4 Econometric analysis

The basis for moving from discussion of the identities to an examination of the behaviourial relationships must be econometric analysis. Unfortunately, probably because of the structural instability induced by frequent changes in policy regime, it is difficult to find non-spurious relationships. The problem of spurious regression in econometrics is discussed before moving to presentation of results.

The problem of spurious regression

Modern econometric time series analysis is much concerned with the problem of spurious regression. This issue turns out

to be critical in the analysis of Zambian data, so we devote space here to an intuitive introduction to the topic.

Econometric analysis uses regression analysis (usually ordinary least squares, OLS) to quantify the impact of a set of variables (the regressors or independent variables) on another variable (the regressand or dependent variable). The technique allows us to state if the effect of a regressor is statistically significant (by looking at its t-statistic), and to judge how well the regression equation explains the behaviour of the dependent variable (by looking at the R^2). However, there is a great danger that in time series data our regression results may be spurious.

The problem of spurious regression is best understood by supposing we have a randomly generated series. More specifically, suppose that we have a time series whose value in a given period is equal to its own value in the previous period plus a random error - such a variable is called a random walk. Now suppose a second variable generated in the same way (from an independent set of random errors). These two variables are clearly unrelated to one another - each is determined entirely by a set of random errors. Yet experimentation shows that more often than not (in about 80 per cent of cases) OLS regression of one of these variables on the other will yield a significant result. This result is clearly spurious, since we know there is no relationship between the two variables. Such spurious regressions can appear "good regressions", i.e. having a high R^2 (indeed the R^2 being higher than the Durbin-Watson statistic is a rule of thumb for possible spurious regression).

Spurious regression occurs because of the apparent trends which appear in series generated as a random walk. That is, a random walk may spend some time going up or down (which is more likely still if it is a "random walk with drift", i.e. with a deterministic time trend). To formalise the

discussion:

$$x_t = \beta x_{t-1} + e_t \qquad (4.7)$$

where e is the error and ß is the "autoregressive coefficient"; for a random walk ß=1. Any variable which my be described by equation (4.6) with ß≥1 is called non-stationary, and will display apparent trends. Regressions involving non-stationary variables may yield spurious results. (It has also been shown that OLS on non-stationary results gives biased and inconsistent estimates). Why does this problem exist?

Regression of one trend on another is very likely to yield significant results. If two time series happen to be going up at the same time there will appear to be a relationship between the two - this problem has been recognised as "spurious correlation" since at least the 1920s. The role of recent work has been to formalise the problem, to provide tests for if it is present and develop methods for estimation using non-stationary variables.

Testing if a variable is stationary is through estimation of ß in a (modified) form of equation (4.6); this test is known as the augmented Dickey-Fuller test. The usual t-statistic is not applicable; instead critical values calculated by McKinnon should be used. Many economic variables are non-stationary, presenting problems for macroeconometric work. Of the 34 variables included in the econometric data set for this study, 27 are clearly non-stationary (all levels variables are in constant prices). Only one variable (government revenue) appears to be stationary at the 5 per cent level. The remaining six appear stationary only at the 10 per cent level. (See Appendix 4.1 for these results). Therefore there is a great danger of spurious regressions occurring in the analysis of Zambian data.

Estimation with non-stationary variables requires the use

of cointegration analysis. The rationale for this approach is as follows. The problem of spurious regression arises because of the apparent trends in the data. But although the data may move together, in the absence of a genuine relationship between the two variables they will not do so in a systematic manner. Hence the difference between the two series will also display an apparent trend: that is, also be non-stationary. On the other hand, if the difference between the two is non-stationary, this difference reflects the random fluctuations in a genuine, non-spurious relationship. More formally, cointegrating analysis involves carrying out the normal OLS regression (the levels or cointegrating regression). If the residuals from this regression are stationary then the variables are said to be cointegrated. If they are cointegrated then the OLS regression is <u>not</u> spurious (indeed, the estimates are super-consistent).

Analysis of Zambian data shows that it is quite easy to estimate significant relationships, but far more difficult to find those which are not spurious. For many variables, such as savings (aggregate domestic, and disaggregated into public and private) it is not possible to find any set of regressors with which they are cointegrated. The relationships which were found are discussed below, but first it is worth reflecting on the meaning of the difficulty of finding non-spurious relationships.

It is of course not the case that there are no behaviourial relationships in Zambia. The problem is more likely to be one of parameter instability. Regression of one variable on another assumes that the relationship between the two is constant across time. For a variety of reasons this assumption may be invalid. Usually the problem of structural instability can be dealt with through the introduction of intercept and slope dummies, as has been done in the Zambian data for, for example, before and after the fall in copper price. But the problem in Zambia has been that the country

has not simply moved from one regime to another at a certain point of time, but has frequently switched policies, especially throughout the 1980s. This behaviour will induce instability in economic relationships to a degree which makes it difficult to model them econometrically.

Presentation of econometric results

Table 4.5 summarises the econometric results. The following variables are not shown as it was not possible to find any set of cointegrated variables: aggregate investment, aggregate savings, public savings, private savings, debt service, exports, real exchange rate, mining value added, agricultural value added, private consumption, government consumption.

Although it is not possible to get consistent estimates for aggregate investment - results can be reported for disaggregated investment. Private investment includes the parastatal sector. The equation supports the view that investment has been constrained by lack of foreign exchange, as imports are the main determinant of both government and private investment. Aid is a significant determinant of private investment (of which the largest part will be parastatals), but not government investment. The non-availability of data on disaggregated aid mean that changes in the composition of aid may be drowning out the effects that the different types of aid have.

Since the investment equation shows investment to be determined primarily by imports, an indirect effect of aid on investment might be expected through aid's effect on imports. In fact it is not possible to find a significant impact from aid on imports. The negative impact of aid on imports shown by the simple regression is not robust to alternative specifications: but there is no significant relationship either way. Exports and the terms of trade are the

Table 4.5 Econometric estimates

	M	AID	OK	GR	TOT	GROW	PHAT	X	GDP	I	C	MIVA	NMGDP
IP	0.57*	0.84*	-0.18	–	–	x	x	–	–	–	–	–	–
IG	0.49*	0.29	0.07	–	–	x	x	–	–	–	–	–	–
CGTK	–	-0.12	0.76	0.40	–	–	–	–	–	–	–	–	–
MK	–	–	–	–	3.20*			1.20*	–	–	–	–	–
MK	–	–	–	–	1.07*	–	–	1.00*	-0.94*	0.67*	0.81*	–	–
GR	x	x	x	–	x	–	–	x	–	–	–	1.20*	x
PHAT	–	0.003*	-0.001*	–	–	-1.69	–	–	–	x	x	–	–

Notes: – not included in regression; x included in regression but insignificant or not cointegrated.

significant components. Two import equations are reported - one for forex availability only and one containing import demand elements (see Moran (1989) for the theoretical derivation of hybrid import functions). On the basis of an F-test the simpler equation is <u>not</u> a valid restriction of the more general specification - but the simpler equation appears cointegrated with 99 per cent confidence, whereas the more general one is only so with 90 per cent confidence.

The government sector more generally was not amenable to modelling - in particular to address the issue of the fiscal response of GRZ to aid inflows. Government revenue is primarily a function of mining value added (the coefficient surprisingly exceeding unity in all specifications). There as no evidence of reduced government revenue collections as a consequence of the aid over the period as a whole (or with various structural breaks allowed for). Conversely government consumption and transfers depend most significantly on other capital inflows - not appearing affected by the aid inflows.

Although no estimable equations were found for the real exchange rate, one was found for inflation. Aid appears to exert a positive impact (but other capital flows a negative one). The negative coefficient on growth can be interpreted as representing the effect of increased supply - although this explanation is not entirely convincing as measured GDP of course represents both supply and demand (so this interpretation assumes supply to a binding constraint with quantity adjustment of demand).

Not shown in the table was the estimation of the simple Harrod-Domar equation: from which the ICOR was found to be 16.67. But, as might be expected, the regression did not appear a terribly good one. Some other results did not stand up to more rigorous econometric analysis, but which may be of interest for further work were the clear negative correlation between agricultural value added and the domestic terms of

trade and the positive coefficient (0.8) from the regression of debt service on aid.

4.5 The behaviourial impact of aid

In this section we synthesise the foregoing discussions into an analysis of the behaviourial impact of aid.

Aid, savings and investment

As mentioned above, it has proved difficult to model Zambian savings. The main fact of Zambian savings was clear from Chapter 2 - they fell as consumption levels were maintained in the face of dramatically reduced income. The econometric results suggest that consumption levels were supported largely by other capital flows, not by aid. Living standards had begun to fall by the time aid flows became really significant. On the side of government revenue it has not been possible to find an effect from aid. But this is not to say that donors are not legitimately concerned by the current decline in the tax ratio (which has fallen every year since 1990). Even if the point cannot be demonstrated econometrically, it is difficult to believe that GRZ would have allowed such a fall in the absence of the high aid levels Zambia has enjoyed in these years.

It was argued in the methodological paper for this study that an analysis of the determinants of investment should consider public and private investment separately. This point of view is borne out by the econometric results, which find non-spurious estimates for disaggregated investment, but not for aggregate. Investment is primarily determined by imports, although aid has had a significant positive impact on private (including parastatal) investment.

To understand aid's total impact on investment therefore requires knowledge of how aid has affected imports. No significant impact of aid on imports can be identified econometrically. But econometric techniques cannot capture

the counterfactual where the policy reactions of government and attitude to debt obligations in the absence of aid have not been modelled. It was argued earlier, that in the absence of the adjustment programme GRZ would meet some (around one third) but not all its debt obligations. Since the aid pays for all these obligations at present, the absence of the programme (and therefore of balance of payments support) would reduce forex availability for imports - with consequent adverse effects for investment. In addition to the effects through debt service, adjustment policies are gradually putting into place a policy environment conducive to private investment.

Cross-country analyses of the effects of adjustment programmes (e.g. Mosley *et al.*, 1990) have argued that adjustment policies have an adverse impact on investment - yet we are arguing the reverse. Much of the analysis of such studies is based on techniques which are methodologically quite shaky (White and Luttik, 1994: Chapter 2). (Such as before versus after comparisons - in the case of Zambia, such comparisons show the investment rate to improve with adjustment, compared to surrounding years of non-adjustment). The reasons underlying the supposed adverse impact on investment are (i) reductions in government investment; (ii) the time needed to create the confidence and environment favourable to private investment. In the Zambian case, adjustment has not been associated with lower government investment, compared to the low levels of the 1980s. Given that non-adjustment policies have exacerbated the forex shortage this fact is hardly surprising.

The positive impact that aid may have on investment in Zambia does not, therefore, run through the straight-forward supplementation of domestic savings, as in the two gap model. Rather the argument must be based on the actions of the Zambian government in the absence of the aid programme. In the absence of high aid levels the government would: (i) not

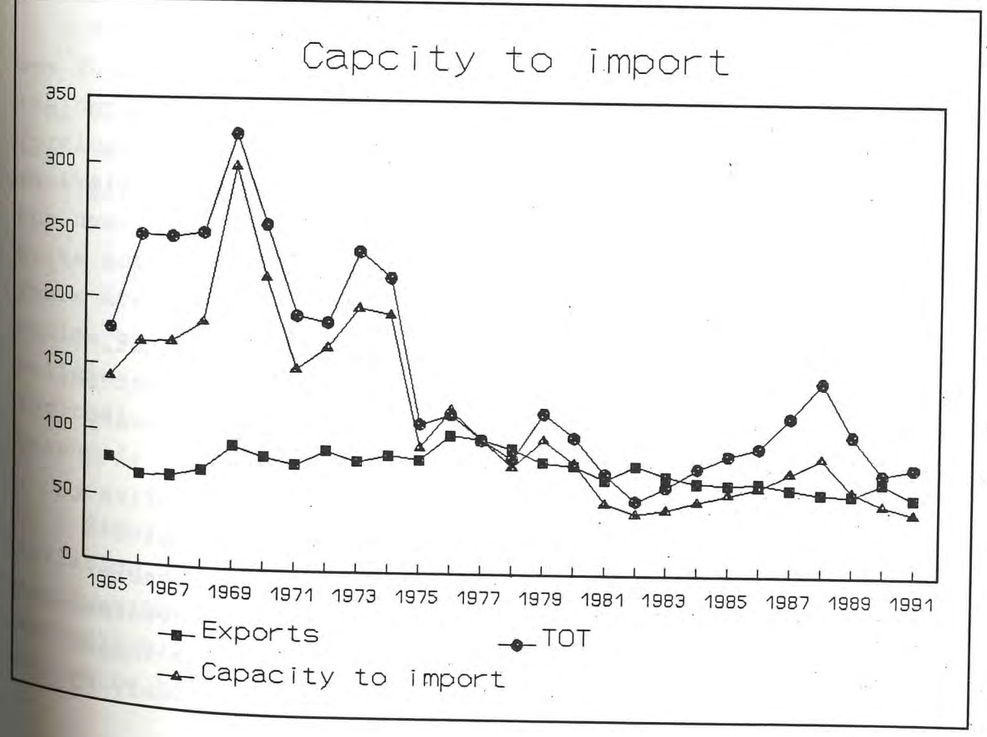
implement the full adjustment programme; and (ii) have to meet debt service obligations from its own resources; hence having direct and indirect adverse effects on investment.

Aid, exports and the real exchange rate

Have Dutch disease effects from aid had an adverse impact on export performance? It was reported above that no relationship between aid and the real exchange rate can be found econometrically. But given the problems of estimating relationships in the presence of the policy instability of the Zambian economy we must devote further attention to the issue.

The predominance of export earnings in financing imports, and explaining the decline in forex availability, was demonstrated in Part 4.2. The variable used for exports here

Figure 4.4
Zambian capacity to import



is the capacity to import: that is nominal exports deflated by the import price index. Changes in the capacity to import are equal to the sum of changes in real exports and the terms of trade. As is clearly illustrated in Figure 4.4 the overwhelming factor behind changes in Zambia's capacity to import has been changes in the terms of trade. Against the large movements in the exogenously determined terms of trade, export volume has remained relatively constant throughout the period show. Whilst the terms of trade are exogenous they can be affected by the exported by changes in the composition of exports. A country facing such poor price prospects as Zambia has done and does is clearly well advised to diversify its export base: this Zambia has manifestly failed to do. What may have been the role of aid in the copper sector and attempts to diversify?

Copper exports will not be particularly sensitive to the real exchange rate as the sector's revenue and a substantial part of its costs are denominated in dollars. To the extent that there are local costs then devaluation (in excess of increases of local costs) will increase the sector's profitability - for example (and most importantly) by falls in real wages. It is more debatable whether these changes in profitability will have any impact on output. Historically, these potential profits have been consumed through inefficiencies and the expansion of ZCCM into non-mining activities. On the other hand one can imagine some relationship between the RER and copper output at present, since the government is dependent upon foreign investment for the planned investments in Konkola Deep which are necessary if copper output is not fall toward the end of the decade as existing mines are exhausted. There must be clear profits to be made to attract this investment. Of course external factors - the copper price and world demand - are probably more important in determining how profitable these investments will be. Hence, avoiding overvaluation may have some impact on the prospects for the copper sector, but is not likely to

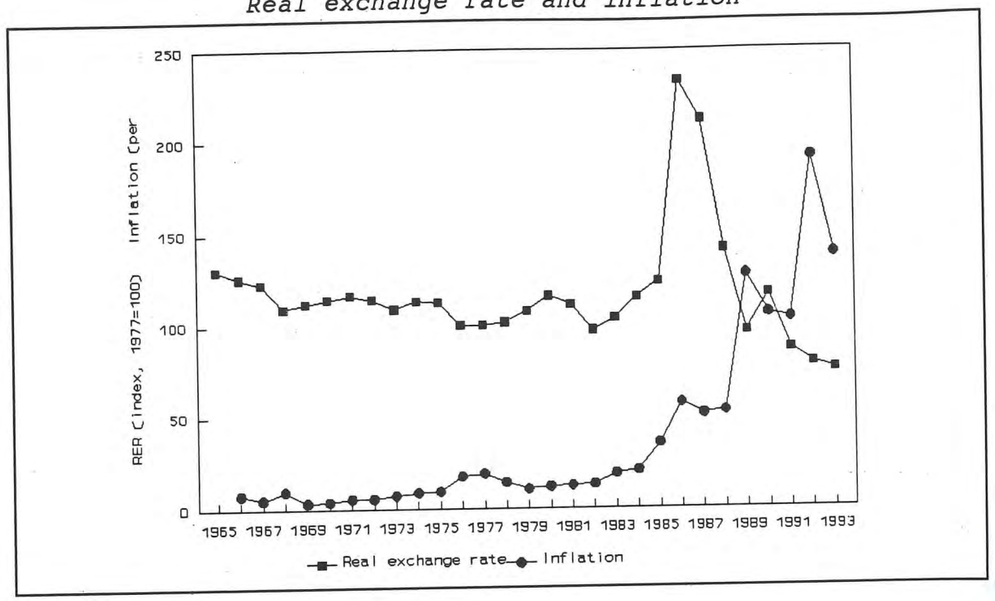
be an important influence of export performance on a year-to-year basis.

The same is not so for non-traditional exports, the production of which can depend crucially on relative prices. Although government-sponsored import substitution is unfashionable these days, small-scale import substitution may be another important result of real depreciation. The liberalisation of trade and foreign exchange transactions has resulted in a flood of goods, particularly from South Africa and Zimbabwe - including items such as cooking oil, biscuits and sweets. There is potential for meeting demand for these items within Zambia - as well as demand for a diversified range of foodstuffs, such as fruit and vegetables. Real depreciation - by raising the relative price of imports - will switch demand to domestic production. Therefore if aid does affect the real exchange rate, it will influence the trade balance through this channel.

Although no direct relationship between aid and the RER was found, aid was found to have an inflationary impact. If the nominal exchange rate is fixed then - since changes in foreign prices are exogenous - aid's impact on inflation is equivalent to exerting pressure on the RER to appreciate. But the nominal rate is not fixed - rather it has been depreciated quite substantially as a part of the adjustment programme. There are thus two competing pressures from aid: the aid-monies cause a real appreciation but the aid-supported policies result in nominal devaluation, creating a tendency for real depreciation. Which of these two pressures has the balance?

Figure 4.5 shows the index of the RER and the rate of inflation. The RER showed a trend appreciation until the devaluations of the early 1980s, and then depreciated very markedly with the introduction of the auction system. Following the abandonment of the auction system in 1987 the

Figure 4.5
Real exchange rate and inflation



RER appreciated back to its former level in 1988/89. The return to adjustment caused a mild real depreciation in 1990, but the subsequent high inflation has meant an <u>appreciating</u> real exchange rate over the period 1990-93. What can be concluded from these trends?

Clearly in the mid-eighties the auction resulted in such massive nominal depreciation that even the high inflation of that time did little to prevent the very substantial real depreciation. The auction was clearly a policy supported by the donors - it is not one that the government would have adopted in the absence of donor insistence. In this instance, then, the effects of the aid-supported policies overwhelmed any inflationary impact which the aid monies may have had.

In the 1990s the story is more complicated as the high inflation has offset the devaluation of the nominal rate to cause a real appreciation. It is not the case that the aid is responsible for all of this inflation. On the other hand - is the adjustment programme responsible for the inflation? The answer to this question, surprisingly, can be yes for three

reasons. First is the failure to enforce the monetary targets. Second, the monetary targets have not been met in part because the programme has obliged Zambia to meet repayment obligations but donor funds to help meet these obligations have fallen below expectations. Third, since nominal devaluation will be inflationary (because of both final consumption of imports and use of imports in production), nominal devaluations do not result in an equivalent real depreciation: they will be offset by the inflation caused by the devaluation itself. If some propagation mechanism (such as wage indexation) allows the initial price increase to spark of an inflationary spiral the impact of the nominal depreciation on the RER will be further whittled away over time. But it is only under extreme assumptions that the inflationary effects attributable to the nominal devaluation can totally reverse the effects on the RER; there is, anyhow, little evidence of a high degree of wage indexation in Zambia. Whilst there is be something in each of these arguments. But the first two do not really add up to a case that adjustment has caused the inflation.

To sum up, there is evidence that aid may have an inflationary impact, hence creating pressure for appreciation of the real exchange rate. Offsetting this pressure, have been the substantial nominal devaluations which would not have occurred in the absence of the aid - these policy effects of aid outweigh the inflationary impact of the aid monies, so that the total impact of the aid is toward real depreciation.

Aid and output

Aid is expected to increase output through its supply side effects. The two gap model supposes that aid will increase imports and investment. We have seen that in Zambia the story is not so straightforward. Much aid has been balance of payments support, a great deal of which has gone in debt relief. Essentially this debt relief relates to the borrowing Zambia undertook after the copper price collapse to

maintain consumption levels. The roots of Zambia's current problems can be traced to the failure to adjust in those crucial years.

This argument does not however imply that output in Zambia would be the same in the cases of with versus without aid. It has already been argued that the aid-supported policies have had positive effects in Zambia. We also believe the aid monies to have had positive effects by relieving Zambia of debt obligations and so increasing imports. Given the overwhelming importance of the foreign exchange constraint in determining investment, alleviation of the forex constraint will help increase investment. Data on the use of auction funds and import composition support the proposition that these flows are also beneficial to production.

Though aid may have promoted the supply side, the possibility suggested by Bhaduri and Skarstein (1994) that aid will reduce demand must still be considered. This argument os presented formally in Chapter 5. The results there suggest that demand is not the binding constraint on income.

4.6 Aid and social development

Economic decline in Zambia has been mirrored by stagnation is other social indicators. Whilst most developing countries have made impressive strides in improving life expectancy, infant mortality rates and the like Zambia has not done so. The first two columns of Table 4.6 show Zambia's ranking in a sample of 106 developing countries in 1970 and 1990.[11] In both cases Zambia's rank has dropped dramatically - the country having moved from being in the top half to the bottom 20 per cent of the 106 countries. The final column shows the rank by the percentage improvement in the indicator - by this measure Zambia's performance is amongst the worst in the world. Infant mortality increased in Zambia and in only two other countries in the sample - Uganda and Mozambique. Whilst the latter two countries have suffered years of conflict the

only tragedy to strike Zambia has been economic mismanagement.

Table 4.6 Zambia's comparative performance on selected social indicators

	Rank by levels		Rank by percentage improvement
	1970	1990	
Life expectancy at birth	66	90	100
Infant mortality rate	46	82	104

Note: total sample of 106 developing countries.

Source: *World Tables* and *Social Indicators of Development*.

Chapter 2 described the high level of social service provision in the aftermath of independence. This infrastructure has not been maintained - the social sector's share of government recurrent expenditure fell from 23.3 per cent for the period 1970-79 to 17.0 per cent for 1980-89.

Why have the high aid inflows which Zambia has enjoyed not prevented the decline in social services and welfare indicators? There are two reasons. First, as is clear from earlier discussions, a relatively small proportion of aid to Zambia has actually flowed into the economy; the vast majority has been used to make debt payments on the debt which originated in the second half of the 1970s. Second, as indicated in Chapter 3, a low proportion of aid is designated for use in social sectors. Of course, aid can assist social development indirectly if it stimulates increases in income - but it is only in recent years that aid to Zambia may have had some chance to do this. It is hard to find arguments that the counterfactual - what would have happened in the absence of aid? - is that social indicators would have faired even more

poorly. This state of affairs should be of great concern to donors, and it is to be hoped that renewed attention to social development will cause aid to have a direct impact on improving the welfare of Zambians. Government and donors should, as a matter of priority, identify the causes of rising infant mortality, and implement a programme to reverse the deteriorating situation.

4.7 Conclusions

The conventional macroeconomic role ascribed to aid - to supplement savings and export earnings to increase investment and imports - does not apply in Zambia. Zambian domestic savings have equalled or exceeded investment in most years, and the country enjoys a positive trade balance in most years (although the current account is in deficit this fact is in large part ascribable to interest payments). Furthermore, decomposition analysis of the sources of changes in imports and investment do not find a large role for aid.

Import levels have largely followed the capacity to import given by export volumes and the terms of trade. In the 1980s large debt obligations have also detracted from the forex available for imports - and, simultaneously, reduced resources available for investment. The aid monies themselves have largely been used to meet these debt obligations.

During the two adjustment episodes (1985-87 and since 1990) a large proportion of aid has been balance of payments support - debt relief or import support. We argue that debt relief has provided a measure of free forex to GRZ and play a stimulative role through conditionality. The specific arguments against import support - such as being used for luxury goods and the inflationary impact of counterpart funds - do not seem to have been a problem in Zambia.

The presumed beneficial impact of aid-supported policies provide an important complement to the macroeconomic effects

of the aid monies. Econometric estimation suggests that aid has an inflationary impact - but the pressure this creates for appreciation of the real exchange rate is more than offset by the nominal devaluations carried out as a part of the adjustment programme.

Since much of the aid has not flowed into the Zambian economy in the current period, and since that which has largely not been directed to social sectors, aid in Zambia has played little role in preventing the stagnation in social indicators. This fact should be of concern to donors.

Notes to Chapter 4

1. These figures are inclusive of debt relief. It can be argued that debt relief should be excluded from such calculations as it relates to past flows.

2. This identity may be presented in a number of ways through various aggregations and/or disaggregations - the most usual of which would be to present capital inflows net of amortization so that only interest payments appear on the left hand (current transaction) side of the equation.

3. Looking at the data suggests that, whilst there was no simple relationship between aid and imports in the 1970s, when aid flows were quite negligible; one may have emerged in the 1980s. However, repeating the regression of imports on aid with slope and intercept dummies to allow for a structural break from 1983 leaves the aid terms insignificant (an "improvement" on the negative slope of the simple regression!).

4. Given the sample size of 24, the correlation coefficient must be at least 0.42 to be significantly different from zero with 95 per cent confidence.

5. Although, as observed in Chapter 2, the current account is in deficit because of the high net factor payments and private current transfers to abroad.

6. This argument is, of course, just a statement of fungibility.

7. So debtors may actually get back more in the end by debt reduction - this principle is captured in the "debt Laffer curve".

8. A controversial issue is whether relief on past non-developmental flows (military assistance and export credits) should be allowed to count as aid. The current compromise agreed by the DAC is to include such flows in an individual country's ODA but not in the DAC total. For practitioners of aid-growth regressions the implication of "unintentional past aid" is that growth should be regressed on future aid.

9. Similar results were found in the case of Tanzania. Cash cover collection rates have increased from around 50 per cent under the administrative system to over 90 per cent under OGL (Doriye *et al.*, 1994).

10. We encountered considerable confusion over the issue of the blocked accounts, but believe the description given here to be an accurate one. The blocking would explain why GRZ has not responded to the request by the Japanese to allocate expenditures against the funds in their counterpart account.

11. For many countries the 1990 figure is the "most recent estimate" from *Social Indicators of Development*.

Appendix 4.1: Tests for stationarity for Zambian data

Variable		DF t-stat	Stationary (at test level)		
			10%	5%	1%
Aid	AID	-2.49	No	No	No
Agricultural value added	AVA	-2.32	No	No	No
Capacity to import	CAPM	-2.89	No	No	No
Government consumption	CG	-2.16	No	No	No
Government consumption plus transfers	CGT	-3.86	Yes	No	No
Consumption	C	-3.13	No	No	No
Private consumption	CP	-3.36	Yes	No	No
Debt relief	DR	-1.76	No	No	No
Debt service	DS	-2.36	No	No	No
Domestic terms of trade	DTOT	-2.24	No	No	No
Exchange rate (index)	EINDX	4.31	No	No	No
GDP	GDP	-1.84	No	No	No
Gross domestic savings	GDS	-3.01	No	No	No
Government expenditure	G	-2.71	No	No	No
GNP	GNP	-2.26	No	No	No
Gross national savings	GNS	-2.49	No	No	No
Government revenue	GR	-4.66	Yes	Yes	Yes
Government investment	IG	-2.31	No	No	No
Private investment	IP	-3.02	No	No	No
Mining value added	MIVA	-3.70	Yes	No	No
Imports	M	-2.57	No	No	No
Import price index ($)	MPIDL	-3.45	Yes	No	No
Import price index (K)	MPIKW	4.52	No	No	No
Manufacturing value added	MVA	-1.89	No	No	No
National disposable income	NPI	-1.94	No	No	No
Non-mining GDP	NMGDP	-2.04	No	No	No
Other capital inflows	OK	-3.62	Yes	No	No
Inflation	PHAT	-0.13	No	No	No
Government savings	SG	-3.43	Yes	No	No
Private savings	SP	-2.58	No	No	No
Service value added	SVA	-1.70	No	No	No
Terms of trade	TOT	-2.22	No	No	No
Exports	X	-2.34	No	No	No
Export price index (K)	XPI	2.50	No	No	No

CHAPTER 5

A THREE GAP ANALYSIS OF ZAMBIA'S PROSPECTS

5.1 Introduction

Analysis of aid's macroeconomic impact has traditionally been in the context of the two gap model (e.g. Chenery and Strout, 1966). Recent work (e.g. Bacha, 1990) has added the government budget deficit as a third gap. This paper applies a three gap model to Zambia, with adjustments to capture the structural features of the Zambian economy. The model also allows for disaggregation of the macroeconomic impact of different types of aid.

Part 5.2 presents the model and part 5.3 simulations to explore the behaviourial relationships contained in the model. In Part 5.4 the model is applied to Zambia. Part 5.5 concludes.

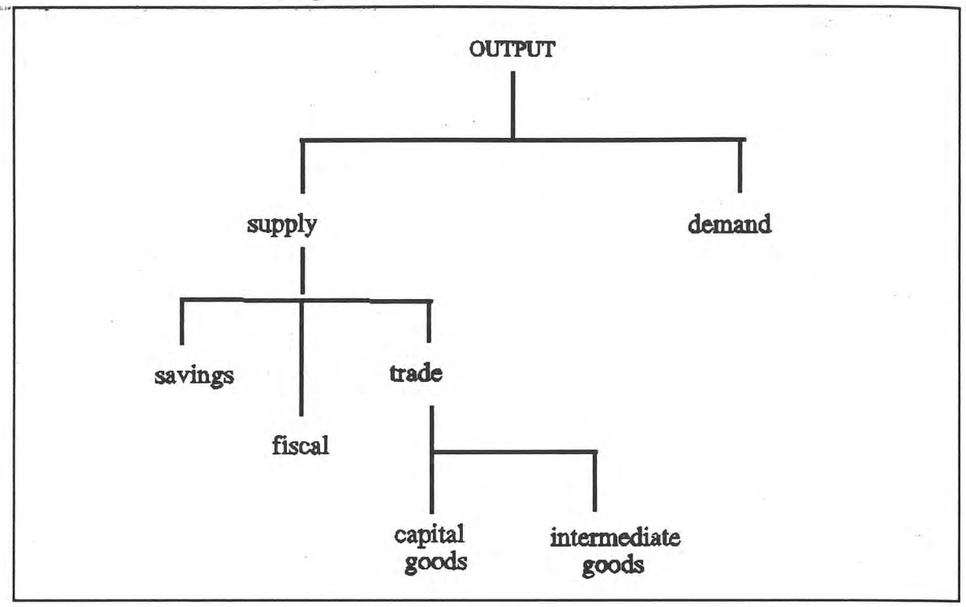
5.2 The model

Gap models are quantity clearing models, in which macroeconomic aggregates adjust to the lowest attainable level. Often, as in this model, there is also price adjustment - but this adjustment operates with a lag and so is too sluggish to clear the market. There are five constraints in this model, as illustrated in Figure 5.1. The overall level of output is given by the supply or demand constrained level. On the supply side three constraints may operate: savings, trade and fiscal. For each of these three supply constraints, the output of the non-copper sector (YO) is calculated, the exogenous output of the copper sector (YC) being added to non copper output to give potential output (Y^P). A binding trade gap can result in a level of output constrained either by shortage of capital or intermediate goods.

Output

In the first instance output may be either supply or demand

Figure 5.1 Model structure



constrained, so that output (Y) is given as:

$$Y_t = \min\{Y_t^s, Y_t^d\} \qquad \textbf{(5.1)}$$

where Y^s and Y^d are total supply and demand respectively.

If the economy is supply constrained then the constraint may come from one of the three gaps: forex, savings or fiscal (with corresponding levels of non-copper output of YO^f, YO^v, and YO^g). Hence:

$$YO_t^s = \min\{YO_t^f, YO_t^v, YO_t^g\} \qquad \textbf{(5.2)}$$

If the forex gap is the binding constraint then the level of output may be constrained by either the level of capital or intermediate imports. So that:

$$YO_t^f = \min\{YO_t^k, YO_t^i\} \qquad \textbf{(5.3)}$$

where YO^k and YO^i are the capital and intermediate import constrained level of output.

Recent three gap models (e.g. Solimano, 1991; and Taylor,

1993a) have used capacity utilisation (u) as an important variable (all variables in those models are normalised by potential output). In contrast to these models in which under utilisation may only result from a deficiency of demand, the model presented here produces capacity utilisation rates of less than one from either a demand constraint or from the unavailability of intermediate imports. Potential output (Y^P) is given by the minimum of the capital goods, savings and fiscal constraints levels of non-copper output plus copper output:

$$Y_t^P = \min\{YO_t^k, YO_t^v, YO_t^g\} + YC_t \qquad \textbf{(5.4)}$$

$$u_t = \frac{Y_t}{Y_t^P} \qquad \textbf{(5.5)}$$

Exports and the real exchange rate

Copper exports (XC) are exogenous and non-traditional exports (XO) given by the export supply function:

$$XO_t = \epsilon_0 + (1+\epsilon_1)\, XO_{t-1} + \epsilon_2 RER_{t-1} \qquad \textbf{(5.6)}$$

where the parameter ϵ_1 represents autonomous growth in export performance or world demand,[1] and RER is the real exchange rate. Total exports are thus:

$$X_t = XC_t + XO_t \qquad \textbf{(5.7)}$$

The real exchange rate is defined as:

$$RER_t = \frac{E_t P_t^*}{P_t} \qquad \textbf{(5.8)}$$

where E and P^* are the nominal and exchange rate and foreign price level, both of which are exogenous. Both the real and nominal rate are defined so that a numerical increase is a depreciation. The domestic price level (P) is give by:[2]

$$P_t = P_{t-1} + \theta_1 (Y^d_{t-1} - Y^s_{t-1}) + \theta_2 E_{t-1} \qquad \textbf{(5.9)}$$

The foreign exchange gap

The gaps are defined by accounting relationships: when a gap is binding the identity defines the constrained variable rather than a behaviourial relationship. In the case of the foreign exchange gap the relevant identity is that the excess of foreign exchange requirements for imports (M) and debt service (DS) over export earnings must be met by a gross capital inflow (aid, A):[3]

$$M_t + DS_t - X_t = A_t \qquad \textbf{(5.10)}$$

Aid and imports are both disaggregated:

$$A_t = A_{k,t} + A_{i,t} + A_{d,t} \qquad \textbf{(5.11)}$$

$$M_t = MC_t + MO_{k,t} + MO_{i,t} + MO_{c,t} \qquad \textbf{(5.12)}$$

where A_k, A_i and A_d are aid for projects (capital), import support (intermediate goods) and debt relief; and MC, MO_k and MO_i imports for the copper sector and capital and intermediate goods for non-copper production. It is a simplifying assumption that all project aid is for capital and all import support for intermediates - as shall be seen, it is the categories of affected imports which matters. Technical assistance is excluded from the model; as noted by Chenery and Strout (1966), such assistance may be important at some levels of development in relaxing the "capacity to invest", (or it may improve the efficiency of investment and hence lower the ICOR). When the foreign exchange constraint is binding there are no consumer imports (MO_c), these are determined as a residual under regimes when there is sufficient forex to purchase the required levels of capital and intermediate imports.

It is assumed that the first call upon available foreign exchange is for debt service and imports for the copper sector. Remaining foreign exchange is available for capital and

intermediate imports, subject to the status for which aid funds are intended:[4]

$$MO_{k,t} = \gamma_t (X_t + A_{d,t} - DS_t - MC_t) + A_{k,t} \qquad \textbf{(5.13)}$$

$$MO_{i,t} = (1-\gamma_t) (X_t + A_{d,t} - DS_t - MC_t) + A_{i,t} \qquad \textbf{(5.14)}$$

where γ is a policy parameter. This parameter is <u>not</u> assumed to be constant in the simulations but varies according to a decision rule in accordance with the binding trade constraint.[5]

The level of output attainable on account of capital goods imports is given by the Harrod-Domar equation:

$$YO^k_t = YO^p_{t-1} + \frac{1}{k} IO^k_{t-1} \qquad \textbf{(5.15)}$$

$$IO^k_t = cMO_{k,t} \qquad \textbf{(5.16)}$$

where k is the incremental capital-output ratio (ICOR) and IO investment in the non-copper sector. (The trajectory of output depends upon the realised level of potential output in the previous period, which may not have been that given by the foreign exchange constraint in the previous period). Equation (5.16) is the rearranged demand function for capital imports, which determines investment under a foreign exchange constraint; the parameter c is expected to exceed unity (but not by much as most capital goods are imported).

If the binding constraint is a shortage of intermediate goods then attainable output is given by:

$$YO^i_t = dMO_{i,t} \qquad \textbf{(5.17)}$$

As for equation (5.16), equation (5.17) is a rearranged import demand equation. The parameter d is the inverse of the ratio of intermediate imports to non-copper value added, and so may typically take a value in the range 2.5 to 4.

The savings constraint

The savings constraint operates through the identity that:

$$IO_t^v = S_t + A_t - DS_t - IC_t \qquad (5.18)$$

where IC is investment in the copper sector, whose financing requirements are assumed to take precedence. Available public (S_p) and private (S_g) savings are given by the savings functions:

$$S_{g,t} = \alpha_0 + \alpha_1 YC_t + \alpha_2 YO_t + \alpha_3 A_t \qquad (5.19)$$

$$S_{p,t} = \beta_0 + \beta_1 YC_t + \beta_2 YO_t \qquad (5.20)$$

where, in accordance with Griffin's hypothesis and the results of the fiscal response literature $\alpha_3<0$. Savings constrained output is thus:

$$YO_t^v = YO_{t-1}^p + \frac{1}{k} IO_{t-1}^v \qquad (5.21)$$

The fiscal constraint

The investment savings gap may be broken down into its component parts:

$$(S_{p,t}-I_{p,t}) + (S_{g,t}-I_{g,t}) = S_t - I_t \qquad (5.22)$$

where I is aggregate investment and I_p and I_g private and public investment. Assuming that all debt is the responsibility of government, the government budget constraint may be written as:

$$I_{g,t} = A_t + PSBR_t + S_{g,t} - DS_t \qquad (5.23)$$

where PSBR is the public sector borrowing requirement. A government policy of fixing the PSBR will impose a limit on I_g through the availability of government savings which may be a tighter constraint of total investment than that given by the total availability of domestic investible resources.

Private and aggregate non-copper investment are given by:

$$I_{p,t} = \delta_0 + \delta_1 I_{g,t} + \delta_2 (A_{k,t}+A_{i,t}) \qquad (5.24)$$

$$IO_t = I_{p,t} + I_{g,t} - IC_t \qquad (5.25)$$

Output is determined by the Harrod-Domar equation:

$$YO_t^g = YO_{t-1}^p + \frac{1}{k} IO_{t-1}^g \qquad (5.26)$$

Demand constrained output

Aggregate demand is given by the national accounting identity:

$$Y_t^d = C_t + I_t + X_t - M_t \qquad (5.27)$$

Public and private savings (and therefore consumption) and investment and exports are given by the behaviourial functions already given above (equations 5.6, 5.7, 5.23 and 5.24) and the import demand functions are those as implied earlier:

$$MO_{k,t} = \frac{1}{c} IO_t \qquad (5.28)$$

$$MO_{i,t} = \frac{1}{d} YO_t \qquad (5.29)$$

Consumer imports are given as a residual:

$$MO_{c_t} = X_t + A_t - DS_t - MO_{k,t} - MO_{i,t} - MC_t \qquad (5.30)$$

Hence a foreign exchange constraint is assumed to operate under the demand constrained regime. Relaxing this constraint would require endogenising a component of the capital account, which is not a realistic representation for a country such as Zambia.[6] The existence of this constraint means that nothing would be added to the model by including the real exchange rate in the import demand functions. Also, an increase in exports does not increase demand for domestic output, since it is immediately offset by an increase in imports. (Aid inflows, on the other hand, may either increase or decrease demand for domestic output depending on parameter values and the type of aid).

5.3 Model simulations

The properties of the model are explored by running simulations in which the amount of aid is varied. Figure 5.2 presents the base run in which there are equal amounts of project aid, import

Figure 5.2 Base run

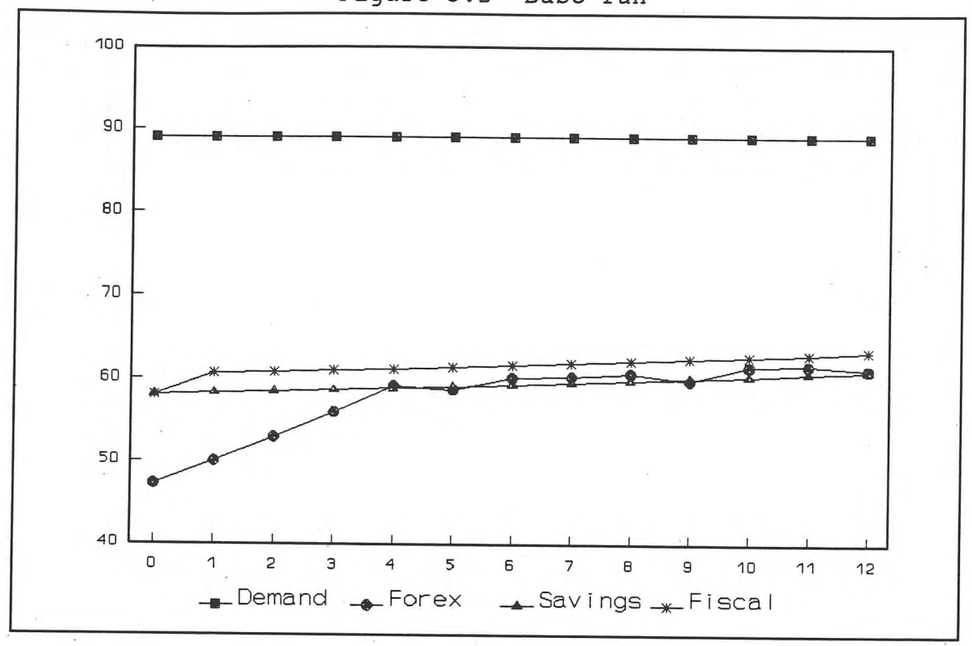
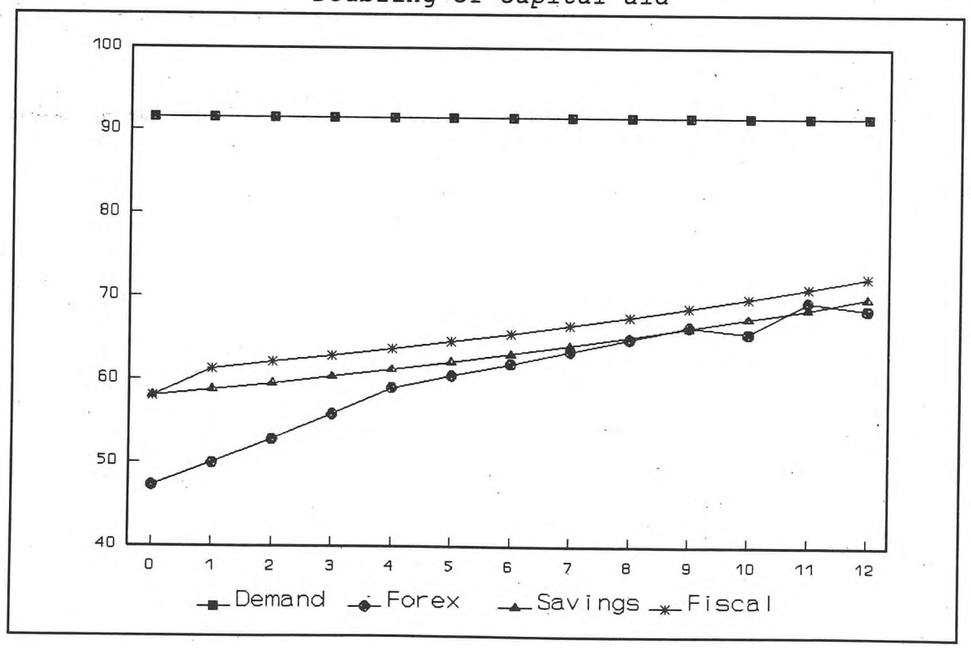


Figure 5.3
Doubling of capital aid



support and debt relief. From period 0-4 the foreign exchange constraint is binding, and this is the intermediate goods constraint rather than the import of capital goods. Thereafter the savings gap is the binding constraint (with the forex constraint fluctuating around this line as the forex allocation rule switches from intermediate to capital goods). For comparison with later simulations, the demand constraint line is at 89.0, and income in period 12 is 60.9.

The first experiment, shown in Figure 5.3, is to double capital aid. Since capital accumulation is increased by the availability of capital aid, and since the larger capital stock requires a higher level of intermediate imports, the foreign exchange gap is now binding up to period 8, after which the savings gap is again binding. The forex constraint is relaxed less slowly after period 4 as before that time the free forex allocation rule makes more available for intermediates (until $\gamma=0$ in period 4). The demand constraint line has shifted up to 91.5 (the reasons for which are discussed below) and period 12 income is 68.4.

Figure 5.4 shows the effect of doubling aid to import support. As may be expected, the forex constraint is no longer binding. The demand constraint has dropped down to a level of 82.6 and period 12 income is 69.8. The higher income compared to the case in which capital aid is doubled is because in the above two simulations when the foreign exchange constraint limits output through lack of intermediate imports the lower savings which result from the lower income act as the constraint on investment (rather than the forex constraint) - hence the trajectory of potential output is lower than when the intermediate goods constraint is lifted.

Finally, the effects of doubling aid for debt relief are shown in Figure 5.5. In this simulation the demand constraint moves to its lowest level of 77.8 and period 12 output is 67.2. The varying impact on demand from the different types of aid may

Figure 5.4
Doubling of import support

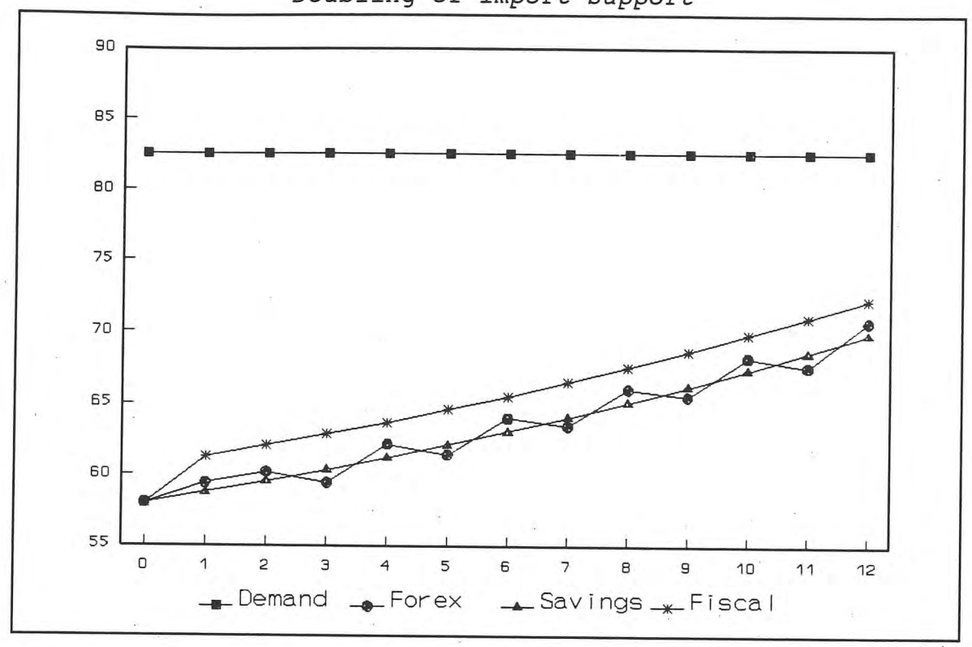
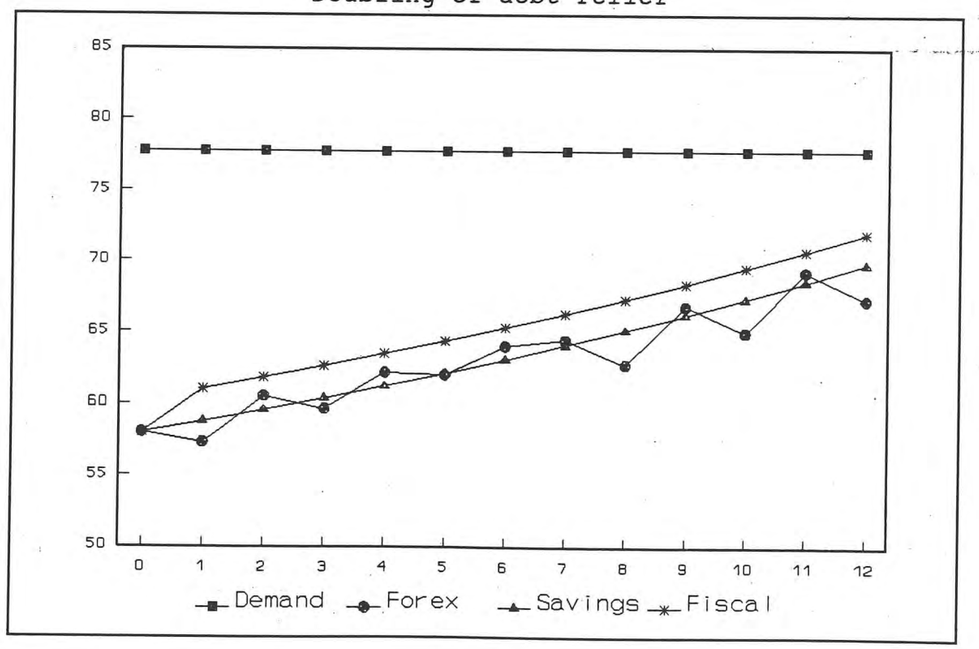


Figure 5.5
Doubling of debt relief



be seen by substituting from equation (5.10) for the trade balance (X-M) into the national accounting identity for demand (equation 5.27):

$$Y_t^d = C_t + I_t - A_t + DS_t \qquad \textbf{(5.31)}$$

Hence, as argued by Bhaduri and Skarstein (1993) an increase in aid will, *ceteris paribus*, lead to a reduction in demand for domestic output. However, *ceteris paribus* will almost certainly not hold true, though the extent to which aid affects domestic absorption (consumption plus investment) varies according to the type of aid. Differentials of the reduced form expression for Y^d for demand constrained output give:

$$\frac{dY^d}{dA_d} = -(1+\alpha_3) \qquad \textbf{(5.32)}$$

$$\frac{dY^d}{dA_i} = -(1+\alpha_3) + \beta_2 \qquad \textbf{(5.33)}$$

$$\frac{dY^d}{dA_k} = -(1+\alpha_3) + \beta_2 + (1+\beta_2)\beta_1 \qquad \textbf{(5.34)}$$

In the case for aid for debt relief (equation 5.32) the depressive direct effect observable in equation 5.31 (which is the 1 appearing as the first term in the bracket) is partially offset by α_3 (which is negative, and so makes the whole affect less than unity): the displacement effect of aid on public savings corresponds to an increase in consumption. The adverse impact of import support aid (equation 5.33) is further offset by β_2, which measures the extent to which such aid crowds in private investment. Finally, capital aid (equation 5.34) not only directly crowds in private investment but also public investment (yielding an additional indirect crowding in effect on private investment).

Bhaduri and Skarstein claim that the Y^d schedule is downward sloping in (A, Y^d) space - but they ignore the impact of aid on

absorption and do not discuss the different types of aid. This model shows that aid for debt relief will unambiguously have the demand displacement effects they claim (α_3>-1), but that there is ambiguity in the cases of import support and capital aid. With the parameter values assumed here inflows of capital aid, but not import support, have a positive impact on demand for domestic output. These demand displacement effects have not been widely considered, but the analysis of this model suggests that it is perhaps not surprising that concern about them has arisen in the context of balance of payments support, as this type of aid makes foreign goods available with limited positive spill-over effects on domestic demand.

In all three simulations of higher aid inflows export performance improves compared to the base run. (In the base run period 12 exports are 17.9; they are 18.0, 18.3 and 18.5 with capital aid, import support and debt relief respectively). In each case the improvement comes from the real exchange rate depreciation brought about by a narrowing of the supply demand gap. This narrowing is achieved both by supply increases and (except for project aid) by demand reduction. Since debt relief has the largest impact on demand it has the most beneficial impact on exports.

This result is contrary to the notion of "aid as Dutch disease". The difference emerges since the Dutch disease argument rests on aid increasing the supply of tradables whereas demand increases for both tradables and non-tradables, resulting in excess supply of tradables and excess demand for non-tradables. The relative price of non-tradables therefore rises, i.e. the real exchange rate appreciates. This model does not contain the tradable - non-tradable distinction. However, the insight it gives, missing from existing analysis of aid as Dutch disease, is that the aid generated supply-side response can have an offsetting effect on the demand increase.[7]

5.4 Application to the Zambian economy

The three gap model presented in this Chapter is now applied to an examination of the prospects for the Zambian economy, using projections submitted by government to the March 1994 Consultative Group Meeting (GRZ, 1994).

Data and model calibration

The government's projections of inflows (which are broken down according to the functional classification used in the model) and debt service are used as the exogenous values. The base year is 1992 and preliminary data on copper output are used. Given depletion of reserves, considerable investment (both rehabilitation and development of Konkola Deep) in the sector is required just to maintain production levels. The government's projections show required imports for the copper sector and copper exports, the former figures is used to estimate sectoral investment. Output is held at its 1992 level.

The price index is set at 100 for 1992, as is the exchange rate index. However the exchange rate index is based on actual values of the exchange rate for 1992 to 1994 (estimated), after which the rate is assumed to be stabilised (which is in fact unlikely given the high levels of inflation predicted by the model for the next few years, but the exchange rate is left as an exogenous variable). In 1993 the Zambian government adopted a cash budget (i.e. no expenditures are made unless the revenue to finance them has been collected), so that a PSBR of zero is assumed in forecasting the fiscal constraint.

Calibration of the model is difficult for four reasons. First, the model is a stylized one. Some parts of the economy (e.g. the monetary sector) are left out altogether. Other exogenous factors (such as weather conditions) are excluded, which is allowable for modelling purposes but not permissible for parameter estimation. Second, estimation of non-spurious regressions is difficult for many variables in the Zambian economy because of the frequent regime changes (see Chapter 4).

Third, we are anyhow concerned to analyse future prospects of the Zambian economy not past performance. It is to be hoped that many of the structural parameters of the economy are changing with the current adjustment programme. For example we use the government's projected 10 per cent annual growth in non-traditional exports, a figure which is certainly not supported by analysis of past trends. Parameters are therefore assigned both by reference to past experience and estimates based on assumed structural shifts (such as higher rates of implied revenue collection than has historically been the case). Fourth, we have not been able to obtain disaggregated aid data over as long a period as had initially been hoped.

Two sets of simulations are shown. GRZ's paper shows a financing gap (of, on average, around US$ 300 million) each year from 1994. The simulation shown in Figure 5.6 assumes the gap is not filled. In Figure 5.7 the gap is assumed filled by aid money; these funds are taken as two thirds project assistance and one third import support. (The financing projections include DFI which has been added into capital aid in the simulations; the former is about one third the latter. Changes in reserves and short-term credits are negligible and have been excluded from the analysis).

In both simulations the binding constraints are trade and demand - the trade constraint being that from lack of intermediate imports. However, if the financing gap is unfilled then the demand constraint is only temporarily binding (1994), with demand rising thereafter. The model shows the economy to suffer a period of decline before growth picks up at the beginning of next decade. If the gap is filled then the demand displacement effects of import support aid cause the demand constraint to be binding until 1998 (although marginally so for the last three years). Thereafter the lack of intermediate goods holds back the level of output.

The simulations show capacity utilisation to remain well

Figure 5.6

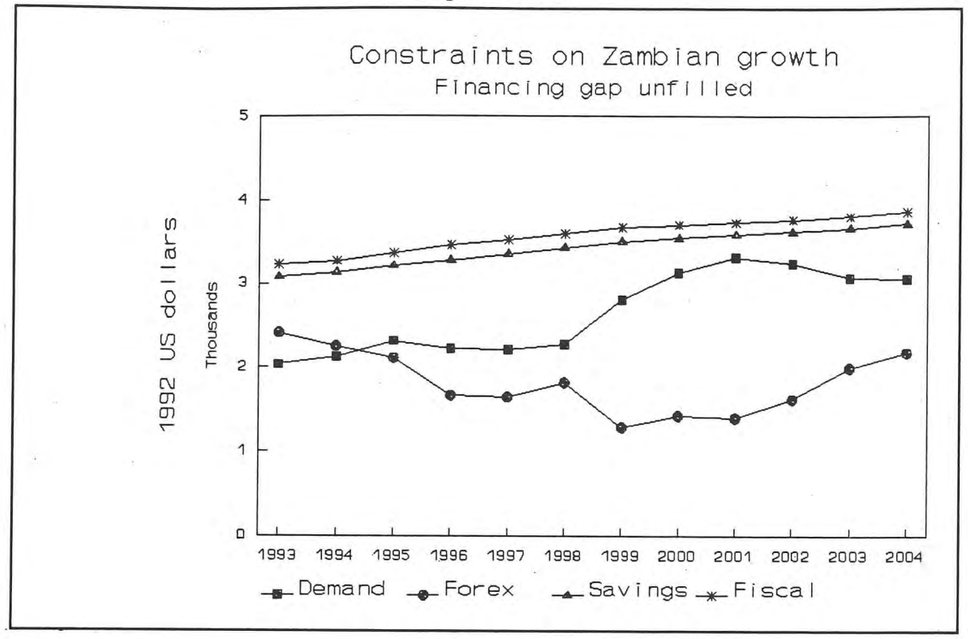
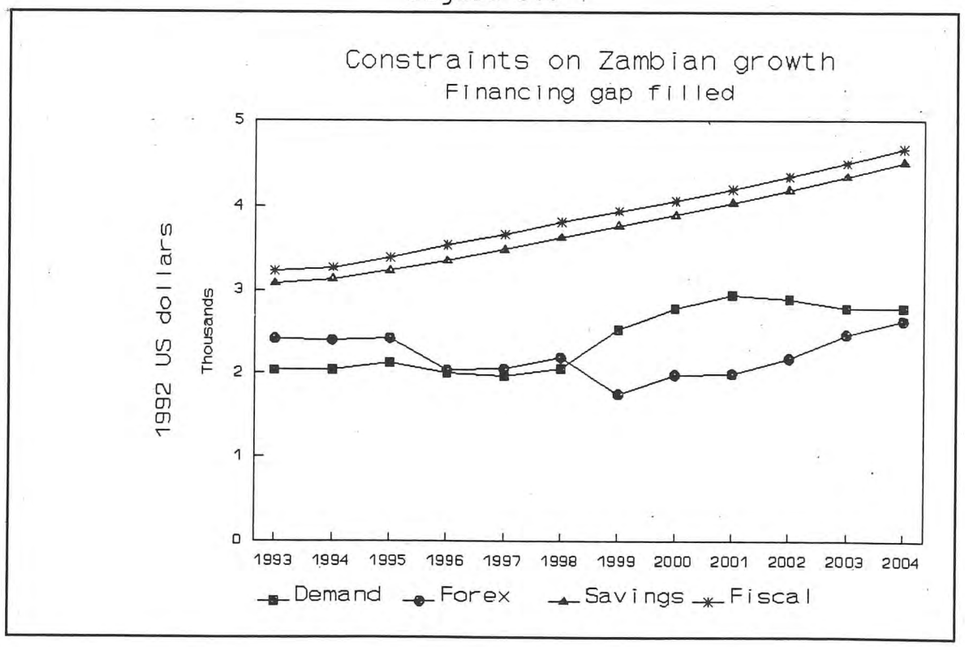


Figure 5.7



below unity for the next decade - strongly suggesting that the emphasis should be on rehabilitation rather than the creation of new capacity. However, import support aid has demand displacing effects which may also constrain the level of output. One possibility is to prefer commodity assistance (tying the aid to specific commodities - e.g. fertilizer - or using a positive list) to the more untied forex which flows through Open General Licence (OGL) systems. Some donors have this preference since they believe that OGL systems allow aid money to be used for luxury consumer items. However, data from Zambia's auction in the mid-eighties show that a large part went to the import of intermediate goods (Chapter 4).

The final scenario is that aid levels are reduced. In Chapters 2 and 4 it was argued that if aid were reduced Zambia would be unable to meet the country's debt service obligations and that the reform programme would not be fully implemented. The growth prospects under such a scenario are dismal.

5.5 Conclusions

This chapter presents a model in which an economy's output may be constrained in any of five ways: (i) demand; (ii) domestic savings; (iii) fiscal constraint; (iv) shortage of capital imports; or (v) shortage of intermediate imports. Aid may alleviate each of these gaps - though the extent to which it does so depends on the type of aid. The functional classification of aid identifies three types: debt relief, import support and project aid. The first two of these may exacerbate the demand constraint, as aid financed goods displace domestic demand with no offsetting stimulative effect on absorption.

The analysis of the Zambian economy shows that aid is not required to finance new investment. The existing capital stock is set to remain under utilised for some years to come, so that the priority for aid is rehabilitation and the provision of parts required to utilise existing capacity. However, the demand displacement effects of import support aid must be set against

the benefit of this type of aid. One implication may be the commodity assistance is preferable to untied foreign exchange, but existing research suggests that this may not be so.

The prospects for growth in Zambia are not promising, despite the very large amounts of aid required. But if the aid were not to be forthcoming then Zambia would plunge further into crisis and living standards continue to fall.

Notes to Chapter 5

1. If the former rationale is given, ϵ_1 could be endogenised through a relationship to public investment (I_g).

2. World prices will also affect domestic prices, but these are excluded from the specification since we do not analyse the effects of changes in world prices.

3. It is common to have the <u>net</u> inflow on the right - so that amortization payments are moved from the left to the right hand side; official transfers are also often included in the current account (left hand side) rather than capital account. Here gross aid loans and grants are aggregated into a single aid figure and interest and amortization combined into a single debt service figure. The vast majority of Zambia's debt service is on its existing debt, rather than relating to new inflows, which are highly concessional.

4. Debt service is assumed to be exogenous. There are two arguments as to why this assumption is invalid. First, debt obligations should be related to inflows. In fact, obligations mostly related to past inflows as new inflows are highly concessional (Chapter 3) - so the exogeneity of DS is valid as a first approximation. The second argument is that, as was argued in Chapter 4, debt service payments are a function of debt relief. This fact could be captured by adding a coefficient to A_d to represent the part which is "truly additional". Our purpose here is to analysis the consequences of the debt burden for Zambia's future growth, so we assume that all obligations will be met.

5. The policy parameter, γ, is given by:

$$\gamma_t = \gamma_{t-1} + 0.05 \quad \textit{if } u = 1$$
$$= \gamma_{t-1} - 0.05 \quad \textit{if } u < 1$$

subject to the condition that γ lies between 0 and 1.

6. Alternatively the exchange rate could be endogenised to clear the external account for given capital inflows. Here we stick to the traditional three gap assumption of a fixed exchange rate regime.

7. The standard Dutch disease model (e.g. Corden, 1984) assume full employment, so the inflationary impact of a boom cannot be partially offset by supply increases, as in the model in this paper.

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APPENDIX: PROJECT DATABASE

A project database of national accounts and balance of payments was constructed in keeping with the disaggregations given in the accounting framework (Chapter 4 of this report and Chapter 2 of main report).

As far as possible data from national sources were used - mainly the CSO's *Monthly Digest of Statistics*. Data for more recent years were provided by CSO and taken from various official publications. All data were checked for consistency, and consistency between the different accounts achieved through the use of balancing items.

It had been hoped to obtain data from the Bank of Zambia for a functional disaggregation of aid since the mid-1980s. In the event, these data were not forthcoming. Hence, some of our capital account data - particularly those for aid - come from international sources. The reconciliation of data from *World Debt Tables* and OECD's *Geographical Distribution of Financial Flows to Developing Countries* is discussed in Chapter 3.