

# Terms of Trade Collapse and the Growth of Foreign Debt: Zambia's Macroeconomic Crisis, 1970-90<sup>1</sup>

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*This article examines the economic crisis of Zambia. Its origins are traced to falling copper prices combined with rising import bills. Like many developing country governments, Zambia responded to these developments by running up large deficits and borrowing heavily abroad. More recently, the government relied on printing money to finance its deficits. These responses have created a huge foreign debt and inflation problem. The only feasible long-term solution is to reduce the government deficit – the dilemma is how to do this without hurting the most vulnerable sections of the population.*

## Introduction

**T**he debt crisis facing many developing countries today can be traced directly to the terms-of-trade shocks which buffeted these economies in the 1970s and 1980s. The problems caused by the massive oil-price increases of the period

were compounded by falling world prices for many of these countries' traditional exports.

The Zambian experience is an extreme illustration of this general theme; the country's import bill shot up while the world price of copper, the commodity responsible for almost all of the country's export earnings, fell dramatically. On top of this, the country's copper resources are nearing depletion.

The present paper attempts to trace in as simple a language as possible, the origins of Zambia's current economic problems – low growth, declining per capita incomes, the debt crisis, inflation – and to analyse the interconnections between these in a way that will be accessible to those without a specialist training in economics; it is also to be hoped, of course, that from the analysis will emerge a sense of the directions in which the longer-term solutions are likely to lie.

The main argument of the paper is presented as an overview in the next section, and the following sections then develop the analysis within the context of Zambia's recent economic history.

## **Setting the scene: an overview of the argument**

In line with actions taken in many other developing countries, the Zambian government responded to the rapid fall in the price of its exports relative to imports that occurred in the 1970s by allowing the government deficit to expand considerably. This represented an attempt to prop up the economy but it also reflected an inability to adjust rapidly to the major reduction in tax revenues from the copper sector. Foreign borrowing was used to bridge the growing deficit. The debt build-up only became a 'crisis', however, when world real interest rates rose to historically very high levels in the early 1980s.

In more recent years the economy has had little access to foreign loans, due not only to its poor credit ratings but also the country's troubled relations with the World Bank and the International Monetary Fund (IMF). The government has therefore resorted, since the mid-1980s, to monetary financing of the deficit (i.e. printing money), with consequent implications for inflation and the value of the exchange rate. Attempts to keep inflation down by holding the exchange rate fixed while the expansion of the money supply continued were

ultimately doomed to failure, as is later argued. Such policies hindered the development of non-traditional export sectors, and the counter-inflationary benefits were in any case largely illusory. Ultimately the control of inflation in the Zambian case requires limiting the size of the government budget deficit; the dilemma though is that unless this goal is pursued very carefully the policy runs the risk of harming the most vulnerable sections of the population.

The macroeconomic policies which have been followed in Zambia to date, however, have failed to tackle the major economic task facing the country, the achievement of which would yield long-term benefits to the whole population; this is the promotion of non-traditional export sectors so as to relax the economy's foreign exchange constraint.

## The foreign exchange constraint

The obvious point from which to begin a discussion of Zambia's economic problems is the foreign exchange constraint that the economy faces, and which is perhaps the major current impediment to development. An economy gains access to foreign exchange either through exporting, through foreign borrowing, through inward flows of foreign investment, or through aid; it uses its foreign exchange to pay for imports. A key statistic that illustrates the extent of the foreign exchange constraint, then, is the *terms of trade*. This measures the prices that the country receives for its exports relative to the prices it must pay for its imports; a rise in the terms of trade would therefore represent an improvement in the international environment that the economy faces.

Table 1 charts the catastrophic worsening of Zambia's terms-of-trade position throughout the period under discussion. The terms of trade improved between 1965 and 1970, but have on average declined progressively since then, due both to the sharp increases in world oil prices in 1973 and 1979, and to the long term decline in world copper prices. The impact of these terms of trade losses can hardly be overestimated.

**Table 1:** Changes in Zambia's terms of trade  
(average annual rate of change over period)

	%
1965-70	+ 3.0
1970-75	- 16.1
1975-80	- 7.6
1980-85	- 1.4
1985-86	-24.3

Source: IBRD 1989

## Investment and growth

The impact that this tightening of the foreign exchange constraint had is clearly marked in the statistics for the overall rate of investment in the economy, shown in Table 2. We begin the period with an investment rate of 29%; by the late 1980s this has fallen very substantially to 10% of GDP (i.e. gross domestic product, the value of all production taking place in the economy in a given year). It was the huge squeeze on profitability, caused by the simultaneous decline in export prices and rise in import prices, that reduced investment to this extent. (Note, however, that while the terms of trade collapsed between 1970 and 1975, the investment rate remained high, going into decline only at a later stage; this aspect of 'the story' will be discussed further below.)

Investment is critical, of course, since it develops the resources necessary for future production. Such a sharp fall in the rate of investment over these two decades bodes ill for the future.

**Table 2:** Investment as a percentage of GDP

	%
1970	29
1975	38
1980	18
1985	10
1986	11
1988	10

Sources: IBRD 1989 and EIU 1989

The terms of trade 'shocks' charted in Table 1 also had a major effect on the economy's growth rate, i.e. the rate at which production (and therefore national income) is increasing. When profitability and export earnings are reduced, and when imported raw materials and machinery become more expensive, the economy's growth rate is bound to fall. In Table 3 we see the extent to which this occurred.

**Table 3: Real GDP growth**  
(annual average over period, as in Table 1)

	%
1965-70	7.1
1970-75	2.5
1975-80	0.1
1980-85	0.8
1985-86	0.9

Source: IBRD 1989

Again we can note that while the growth rate fell substantially after 1970, it did not drop close to zero until after the mid-1970s, even though the sharpest fall in the terms of trade took place in the earlier period. As in the case of the investment rate, this timing needs to be explained, and will be discussed fully later.

## Measuring the impact on welfare

How are we to determine the welfare effects of all these changes? The easiest summary statistic to look at in this regard is a measure of average income, i.e. GDP per head.<sup>2</sup> Here it is important to use a measure that is not distorted by inflation; simply comparing average incomes in 1970 and 1980 in terms of kwacha (the Zambian currency) would be useless, for example, as the purchasing power of the kwacha changed so much during the period.

The following table surmounts this measurement problem by holding prices constant at 1985 levels. In other words the entry for 1989 shows how much purchasing power the 1989 level of income would wield over commodities priced at their 1985 levels. A fall in the statistic between one year and another therefore represents a fall in the purchasing power of the average income over that period.

**Table 4:** GDP per head at 1985 prices (kwacha)

1970	1,447
1971	1,400
1972	1,481
1973	1,468
1974	1,468
1975	1,389
1976	1,404
1977	1,296
1978	1,263
1979	1,214
1980	1,242
1981	1,249
1982	1,181
1983	1,119
1984	1,080
1985	1,051
1986	977
1987	939
1988	964*
1989	932*

Source: IMF 1989 and CSO 1989

\*The 1988 and 1989 figures come from unpublished Central Statistics Office data and are as yet highly tentative.

Table 4 reveals that real income per head remained roughly constant over the 1970-75 period, and declined steadily from then on. This is the most dramatic illustration of the economic impact of the terms-of-trade losses. Note, though, that the pace of decline is more rapid in the 1980s than it was during the 1970s, even though the terms of trade losses were more severe in the 1970s, and particularly during the first half of the decade. This is the timing that needs to be explained.

## **Government budgetary policy and the foreign debt**

The better economic performance in the 1970s compared to the 1980s is partly explained by the coming on stream of the many investment projects undertaken up to the mid-70s, as seen in Table 2 above. The other factor accounting for the relative

buoyancy of the earlier decade is the stance of government budgetary (fiscal) policy. In line with the response adopted by many other developing economies (and Ireland!), the government of Zambia reacted to the international recession induced by the oil-price increases of the 1970s by attempting to prop up the economy through expansionary budgetary policies; the logic underlying this strategy is the old Keynesian notion that government spending increases the total demand for goods and services in the economy and thereby stimulates production; by putting wages in people's pockets it also allows them spend more, thus stimulating a further increase in production, and so on (the 'multiplier process').

Table 5 illustrates this rise in government spending during the 1970s, and as a proportion of GDP.

**Table 5: Government spending**

	As % of GDP
1970	36
1975	51
1980	44
1985	37
1987	36
1988	37

Source: IMF 1989

The expansionary stance of fiscal policy strengthened the tendency of government budgets to move automatically into deficit during a recession (in the Zambian case the major factor would be the sharply reduced tax intake from the copper sector), and the massive deficits shown in Table 6 resulted; (a positive number in the table indicates a surplus of government receipts over expenditures, a negative number a deficit).

**Table 6: Government budget balance**

	As % of GDP
1970	2
1975	- 22
1980	- 19
1985	- 14
1987	- 11
1988	- 11

Source: IBRD 1989 and IMF 1989

The expansionary strategy followed by so many developing countries in the 1970s would have appeared at that time more reasonable than it appears in hindsight. The factor causing the change in perspective is the subsequent behaviour of world interest rates. Throughout the 1970s *real* world interest rates were negative (i.e. the quoted bank rates were less than the inflation rate, so that borrowers were receiving more purchasing power than they would have had to pay back, had that situation continued). This made borrowing appear very attractive. The problem, however, was that real interest rates (unexpectedly) became strongly positive in the early 1980s, with the result that the vast debts that had been accumulated in the 1970s now had to be serviced at historically very high real interest rates.<sup>3</sup> This is of course, in a nutshell, the origin of the 'World Debt Crisis'.

The explosion in government debt resulting from this fiscal stance is charted in Table 7.

**Table 7:** Public and publicly-guaranteed debt

	As % of GNP
1970	36.0
1978	48.5
1980	60.7
1982	65.3
1984	110.8
1985	150.8

Source: IBRD 1986-87

These debts must be serviced in foreign currency. Two strands of the story now come together, because while the amount of debt to be serviced has been building up rapidly, as we have just seen, the economy's ability to earn the foreign exchange required to service the debts has been declining, as the terms-of-trade figures (Table 1) showed us. The statistic used to measure the debt burden *relative to the economy's ability to service it* is the debt/export ratio, the evolution of which is shown in Table 8 below.

**Table 8:** The debt export ratio (%)

1970	62.7
1975	129.2
1980	134.3
1982	220.8
1984	289.1
1985	379.5

Source: IBRD 1986-87



Notice that while the debt-to-GNP ratio was roughly four times higher in 1985 than it had been in 1970, the debt-to-export ratio had worsened six-fold, illustrating graphically the squeezing of the economy between terms-of-trade developments on one side and the debt crisis on the other.<sup>4</sup>

The deterioration in the government budget brought about both by the automatic effects of recession and by expansionary fiscal policies was exacerbated by the vicious cycle of debt service, since interest payments on a growing debt are themselves an important component of overall government spending.

## Government deficits and the money supply

Debt, of course, is only one of several ways in which the budget can be financed. To identify the other sources of finance, note that the overall deficit consists of government spending less tax revenues and government foreign aid receipts. The deficit can then be financed by the government either borrowing from abroad (i.e. receiving external loans), borrowing from domestic savers (i.e. internal loans), or else by borrowing from the domestic banking system. Following the latter course involves an increase in the money supply, either through the Central Bank printing new currency or through the commercial banks crediting to the government's account the value of the loans they have made; (the money supply consists of cash in circulation plus the value of bank deposits).

What has been happening in recent years is that the Zambian government has had to rely more and more on the third source of finance, involving money creation, because the amount of domestic savings in the economy is naturally quite small and because the difficulties of borrowing abroad have been increasing (due to the country's being thought of as a high-risk borrower, because of its past debt service record).

This situation is depicted in Table 9. The budgets announced for 1989 and 1990 are shown, together with the planned sources of finance. By far the largest source relied upon is domestic bank borrowings, which lead inexorably, as we have seen, to an expansion of the money supply. Also shown is the actual outturn for the 1989 budget deficit, which is much larger than the planned level, and the difference between the two is

probably financed almost exclusively by further money creation.

**Table 9:** Financing the government deficit (kwacha, mn)

	1989 Budget	1989 Outturn	1990 Budget
Deficit	1,918	3,533	4,137
Financing			
External loans	477		1,285
Internal loans	67		67
Domestic bank borrowings	1,374		2,784

Source: EIU 1990

The growth in the money supply has been due largely, then, to the government budget deficit and the absence of alternative sources of finance for that deficit.

What is the importance of the money supply? Are there problems associated with this method of financing that are in any way equivalent to the choking off of funds for private sector investment that government borrowing on domestic capital markets brings, or to the obvious problems associated with foreign borrowing by the government? The answer to these questions requires an analysis of inflation and of exchange-rate determination.

## The money supply and inflation

Although widespread controversy ensued among economists when leading monetarist Milton Friedman first made the claim that 'inflation is always and everywhere a monetary phenomenon', it is probably fair to say that most would now accept it as largely valid, in the sense that prolonged inflation can only occur when the money supply is being expanded rapidly. The simplest explanation for this is that prices rise as a result of 'too much money chasing too few goods'. Simply printing money does not create new wealth; with more money in circulation, its value must decline, which is just another way of saying that goods prices are driven up.

The relationship is seen clearly when we look at a period such

as 1970-75 when money supply growth was around 11% per annum, on average, and inflation 9%, and compare it to the period 1980-85 for example, when money-supply growth was 31% and inflation 26%.

**Table 10: Inflation and money-supply growth rates**

	Inflation	Money-supply growth
1970	6	- 10
1971	5	7
1972	6	21
1973	8	7
1974	10	12
1975	18	26
1976	20	12
1977	17	- 9
1978	10	30
1979	12	9
1980	14	8
1981	12	34
1982	20	11
1983	20	17
1984	37	23
1985	52	93
1986	43	54
1987	56	62

Source: IMF 1989

## The money supply and the value of the exchange rate

Finally, let us consider the relationship between monetary expansion and the value of the exchange rate. The money supply in 1988 was about ten times its 1983 level, while the 1988 exchange rate was about one-tenth its 1983 level! As one might immediately suspect, this is more than pure coincidence.

Again the simplest explanation requires only that one approach the problem from the correct angle: think of the exchange rate as the international value of the country's currency. Exactly as an overexpansion of the money supply reduces the domestic purchasing power of the kwacha (by

generating inflation), so it reduces its international purchasing power: 1000 kwacha will now buy fewer dollars than before.<sup>5</sup> We can think of this as a general principle: if the money supply is persistently overexpanded (i.e. if it grows at a faster rate than production or GNP does) then the exchange rate is bound to fall. This explains why the exchange rate never stabilised during the period when foreign exchange was being auctioned publicly, as many people at the time seem to have expected it to do; the fall was being driven by the overexpansion of the money supply; as long as this overexpansion continued, the fall was bound to continue.

There have been periods, of course, when the authorities tried to maintain a fixed exchange rate even while the overexpansion continued. What effects did this type of policy have?

To answer this question, let us consider first of all what happens if the exchange rate is allowed to fall freely as the overexpansion of the money supply occurs. Prices rise of course, but the international competitiveness of the country's exports is not affected, since the higher domestic prices are offset by the lower dollar value of the kwacha, so that Zambia's exports continue to sell at the same dollar-prices abroad. The high inflation does not therefore affect the country's balance of payments.

Now consider the situation where the authorities try to hold the exchange rate fixed. There is no offsetting movement in the exchange rate in this case to compensate for Zambia's higher inflation rate, so higher dollar prices are now being charged for Zambia's non-traditional exports (copper prices are essentially denominated in dollars), making them more difficult to sell abroad. Imports, on the other hand, will be less expensive in Zambia than if the exchange rate had been allowed to fall (because prices of commodities denominated in dollars will exchange for fewer kwacha than they would otherwise do). Overall, then, we can see that the reason why such a strategy is so frequently followed is that it keeps import prices down. Holding the exchange rate fixed is a type of counter-inflationary strategy.

The analysis also identifies the flaw in the policy, however. Maintaining a fixed exchange rate worsens the economy's foreign exchange constraint, because it makes it more difficult to sell non-traditional exports abroad. Import prices may be kept down, but the economy has even less foreign exchange with which to purchase them! Herein lies the explanation for a

situation that one frequently hears discussed in Zambia. In periods when the exchange rate was being highly controlled (e.g. preceding the foreign exchange auctions), imported commodities simply were not available. In periods when the exchange rate was more flexible, the supermarket shelves were stocked with imports, but at high prices. In this light the counter-inflationary benefits of exchange rate overvaluation are revealed as largely illusory.

## Conclusions

The macroeconomic policies which have been followed in Zambia have failed to tackle the major economic task facing the country, which is to promote the development of non-traditional export sectors so as to relax the economy's foreign exchange constraint.

The attempt to keep inflation down by holding the exchange rate fixed while the overexpansion of the money supply continued was doomed to failure; it actually hindered the development of non-traditional export sectors, and its counter-inflationary benefits were, in any case, largely illusory.

Just as artificially fixing the value of the exchange rate is revealed on deeper consideration to have had largely negative consequences, because it entailed attacking a symptom rather than the problem's source, so maintaining interest rates below market-clearing levels has had opposite effects to those intended; specifically, to the extent that it reduced the amount of savings available to finance investment, the overall level of investment was reduced rather than increased.

What lessons can be drawn for other developing countries from this experience? The role of macroeconomic policy, the analysis implies, should primarily be to foster an economic environment conducive to investment; the paper has identified various mistakes made in Zambia's macroeconomic management in the recent past, such that this goal has proved elusive. Microeconomic questions concerning industrial strategy however are the more complex and difficult ones for countries at Zambia's stage of development – how to determine and promote the correct balance between indigenous and multinational investment and between public and private enterprise.

## References (Tables)

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## Footnotes

1. An earlier version of this paper was presented to a workshop of Permanent Secretaries of the Zambian Civil Service in Siavonga and at several seminars in Lusaka, Zambia, in May 1990. The helpful comments of Aidan Pender (IPA), Joe Durkan (UCD), the seminar participants and a referee for *Trócaire Development Review* are gratefully acknowledged.
2. Note however that this statistic tells us nothing about the distribution of income across the population.
3. Unfortunately this also meant that the *net* effect of the fiscal expansion *plus* the contraction that would later be required to bring the debt problem under control was negative. A recent econometric analysis of this issue in Ireland concluded that 'the expansionary fiscal policies of the 1970s reduced unemployment (by 3 percentage points) at the cost of a massive build-up in the economy's foreign debt. When world interest rates rose dramatically in the early 1980s, the debt to GNP ratio accelerated upwards and stabilisation of the economy necessitated a harsh fiscal contraction. According to our analysis this contributed an extra 4.7 percentage points to the unemployment rate in the 1980s. That the net effect of the expansionary and contractionary phases over the whole period 1970-87 is negative is hardly surprising, given the high real interest rates at which the debt has had to be serviced'. F. Barry and J. Bradley (1991), "On the Causes of Ireland's Unemployment", *Economic and Social Review*, 22, pp. 253-86.
4. These statistics are also useful for cross-country comparisons. As mentioned earlier, Ireland's debt crisis mirrors that of Zambia in terms of causation, though not in terms of size; the Zambian debt/GNP ratio is less than three times Ireland's. Its debt/export ratio is four and a half times greater, however, because Ireland's export performance has been better.
5. In the interests of keeping the analysis as simple as possible (whilst hopefully retaining insight), I have given an excessively monetarist interpretation of the decline in the value of the kwacha. The exchange rate is determined by demand (i.e. by foreigners' desires to purchase Zambia's exports, for which they require kwacha), as well as by the supply factors I have been focusing on (i.e. by the extent to which the money supply is being expanded). In the earlier period the decline was probably driven by demand but since the money supply started to expand so rapidly in the mid-1980s this factor has become the dominant one, and is likely to remain so for the next few years, justifying our concentrating upon it.

