EXTERNAL DEBT AND ECONOMIC GROWTH IN ZAMBIA: AN EMPIRICAL INVESTIGATION (1975 – 2000)

BY

GRAYSON KOYI

A DISSERTATION SUBMITTED TO THE UNIVERSITY OF ZAMBIA IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE AWARD OF A MASTER OF ARTS IN ECONOMICS

UNIVERSITY OF ZAMBIA
SCHOOL OF HUMANITIES AND SOCIAL SCIENCES
ECONOMICS DEPARTMENT

2006

Declaration

I hereby declare that this dissertation represents my work, and that it has not previously been submitted for a degree, diploma or other qualification at this or another University.

.....

Grayson Koyi

Certificate of Approval

This dissertation of Grayson Koyi, has been approved as partial fulfilment of the requirement for the award of the Degree of Master of Arts in Economics by the University of Zambia.

Name	Signature	Date
1. Prof. Venkatesh Seshamani (Supervisor)		22 JANUARY 0
2. DR. LADSLOUS MWANOSA EXTERNAL EXAMINER		24-01-2007
3. DR PATRICK [illegible] (HA COORDINATOR)		25-01-2007

Acknowledgements

Undertaking a Master of Arts (M.A) degree at the University of Zambia (UNZA) was a wonderfully stressful adventure. While moments of adversity could conspire to derail the process and blur one's focus, the inspiration of those who have trodden this path before constantly strengthened my conviction and provided the reaffirmation necessary to progress with a single mindedness of heart and purpose. I acknowledge the friendship and encouragement from all staff and students in the economics department.

In this regard, no one provided more commitment and support than my supervisor, Professor Venkatesh Seshamani, who was my permanent source of inspiration. With never failing enthusiasm he was a constant source of professional acumen, valuable ideas, and encouragement. The research also largely benefited from the analytical stringency of external examiners, whose incisiveness and valuable comments forced me to sharpen my arguments. I owe a great deal to the two external examiners that reviewed and commented on the earlier version of the paper.

This study would not have materialised had it not been for the financial support of the Civil Servants Union of Zambia (CSUZ). I will always be grateful and pledge that the certification, knowledge, experience and discipline obtained will benefit the noble cause of labour.

My sincerest thanks go to all participants at a seminar arranged by the University of Zambia's economics department at an early stage of the study. In addition, at the economics department, I wish to thank Dr. Felix Masiye for his help with a number of practical matters. I remain indebted to all those involved in the study who have not been mentioned here.

Finally, I take sole responsibility for the views expressed in this paper.

Table of Contents

List of Tables

List of Figures

Acronyms and Abbreviations

BOP	-	Balance of Payment
BOZ	-	Bank of Zambia
CDF	-	Country Development Framework
CSO	-	Central Statistics Office
GDI	-	Gross Domestic Investment
GDP	-	Gross Domestic Product
GDPGR	-	Gross Domestic Product Growth Rate
GNP	-	Gross National Product
HIPC	-	Highly Indebted Poor Country
IDA	-	International Development Association
IMF	-	International Monetary Fund
INDP	-	Interim National Development Plan
MOFED	-	Ministry of Finance and Economic Development
NERP	-	New Economic Recovery Programme
ODA	-	Overseas Development Assistance
PCGDI	-	Per Capita Gross Domestic Investment
RAP	-	Rights Accumulation Programme
SAP	-	Structural Adjustment Programme
SSA	-	Sub-Saharan Africa
UN	-	United Nations
UNCTAD	-	United Nations Conference on Trade and Development
US	-	United States

Abstract

The objective of this study was to contribute to the knowledge about the effects of external debt on economic growth in Zambia during the period 1975 to 2000. The results were expected to help substantiate the case for significant debt reduction and even outright cancellation for developing countries like Zambia. However, such a study was also relevant from a more general policy perspective since results would hopefully help attempts at debt relief become more cognisant of both opportunities and limitations of debt relief initiatives.

The problem investigated was how external debt influenced Zambia's economic growth during the period 1975 to 2000. The study used a deductive method of analysis. As such, the research methodology involved two main stages: first, a review of important documents that shed light on external debt and growth in general and those specific to Zambia. Second, the study tested econometrically the hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP). On this basis, a two-stage least squares (2SLS) regression method was used to estimate the econometric model.

A major finding of the study was that Zambia's external debt and debt service payments reduce investment and thus depress the economy through a combined effect of high debt-to-income ratios and through high debt service-to export ratios. The existence of two separate channels of influence, i.e. through the 'debt overhang' and crowding out effects proved inconclusive, however. Nonetheless, the overall hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratio and a high debt service-to-export ratio was found to be valid. Thus, the conclusion the study reached was that the attainment of sustainable levels of economic growth in Zambia would be difficult without aggressive measures to significantly reduce the stock of external debt. In view of this, the study's major recommendation was for accelerated debt reduction that would be sufficient to allow for recovery of both investment and economic growth in Zambia.

1.0 Introduction to the Study

1.1 Background Information

During the three decades beginning in the 1950s, deficits in the current account were considered normal. Countries were encouraged to borrow abroad and create an environment conducive to foreign investment to boost their economic growth. In the process, little attention was paid to the liabilities side of the current account deficit, which increased the external indebtedness of these countries, until when Mexico, despite being an oil exporter, declared in August 1982, that it could not service her external debts. Ever since, the issue of external debt has assumed critical importance in development policy and practice.

Arguably, external indebtedness is not harmful per se. Nor does heavy external debt automatically imply that growth must necessarily be low. According to Chenery and Strout, "what is detrimental is the inability to meet current debt obligations" (1966:4). A country may be able to export enough to generate the foreign exchange needed to buy the increasing imports associated with rapid growth and still service a high level of debt. Or it may be able to generate the necessary foreign exchange by borrowing more. But the concept of solvency implies that this process cannot go on forever (Williamson, 1996). Most of the countries classified as Highly Indebted Poor Countries (HIPCs) not only face solvency problems, but also face a liquidity problem.

Zambia is a typical example of a HIPC facing both a solvency and liquidity problem. Arising from the well-known dual shock of the mid-1970s, Zambia has had difficulties managing its external debt burden. The debt burden, compounded by massive poverty and structural weaknesses of the national economy has made the attainment of rapid and sustained growth and development difficult in Zambia. Consequently, national and global social movements have actively advocated for a significant reduction and even outright cancellation of the external debt of developing countries like Zambia. However, such

demands have often not been informed by rigorous analytical studies to substantiate their case. This study was aimed at providing one in the Zambian case by demonstrating the effect of external debt on investment and economic growth and thus helping the cause for significant debt reduction.

In particular, the study tested the hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP).

The analysis spanned the period 1975 to 2000. The year 1975 was taken as a useful starting point for investigation because available literature suggests that the mid-1970s marks the beginning of Zambia's debt problem, which can be traced to effects of the dual economic shocks that set in during the periods 1972/3 and 1981/2.[1] The period of investigation spanned a period of 25 years to enable a reasonable sample as well as to understand clearly how the external debt contracted at that time continued to influence macroeconomic policy in the next two decades. Besides, at the time the study was undertaken, the year 2000 was the latest year for which data was available.

1.2 Statement of the Problem

Against this background, the problem investigated in the study was how external debt influenced Zambia's economic growth during the period 1975 to 2000. According to the World Bank, Zambia's total external debt, which was about US$3.5 billion in 1980, had jumped to US$7.2 billion in 1990 though it dipped to US$6.3 billion in 2000 (World Bank Debt Tables, 2000:45). Associated with the rising external debt stock was the debt service burden[2] which even though it was a mere 19.2 percent in 1975, it jumped to 186 percent in 1995 and remained substantially high through out the 1990s (World Bank,

[1] See for instance, Mwanza (1992) and UNCTAD, Trade and Development Report, 1988.
[2] Measured by the ratio of actual debt service payments to exports of goods and services

2000:45). In the process, the deep global recession of 1981/2 made it impossible for Zambia to generate sufficient revenue to pay back loans on schedule. Consequently, by the mid-1980s, Zambia was officially classified as being "debt stressed" (Klein, 1987:18). By 1996, Zambia was further classified as a Heavily Indebted Poor Country (HIPC).

Incidentally, a close examination of key macroeconomic indicators revealed that economic performance in Zambia started to deteriorate after 1975 when the country found itself in a quagmire of economic problems. As Mwanza reports, "the country's Balance of Payments (BOP) shifted from a surplus position recorded in the period 1964 to 1974 to a deficit position between the period 1975 to 1982"(1992:14). Meanwhile, the growth rate of real Gross Domestic Product (GDP) dropped from a period average of 2.7 percent between 1964 and 1974 to 0.8 percent between 1975 and 1982 (Mwanza, 1992:14). At the same time, investment shares in GDP decreased to a period average of 21.9 percent between 1975 and 1982, setting in motion a downward trend (Bank of Zambia, 1989:19).

It was therefore argued by many leading scholars, national and global movements "that the huge external debt of Zambia constituted a serious obstacle to economic growth since investment resources for productive pursuits were consistently being used to meet external debt service obligations"(see for instance, Mwanza, 1992; Seshamani et al., 1999). These two issues – external debt and economic growth –seemed, therefore, to be interrelated. Writing on Sub-Saharan Africa, Iyoha (1999:21) notes as follows: "indications are that the excessive stock of external debt is retarding growth and hampering the socio-economic development of Sub-Saharan African (SSA) countries". If it is indeed the case that external debt has been retarding growth in Sub-Sub-Saharan Africa, it might be expected that external debt should retard growth in Zambia as well. This study asked whether indeed external debt has been retarding economic growth in Zambia. Accordingly, the problem was formulated as follows: *investigate the influence of external debt and debt service obligations on gross domestic investment in Zambia and*

thus find out its effect on economic growth in order to understand what would constitute appropriate policy responses for debt reduction.

1.3 Justification of the Study

This study was justified for a number of reasons. First, there is frequent reluctance in the international financial community to consider accelerated debt relief to Highly Indebted Poor Countries (HIPCs). This is because the stock of external debt and debt service payments are not considered to be significant factors inhibiting investment and economic growth in the developing world (Sachs, 1989:12). As the IMF once argued, "lower levels of public investment in Sub-Saharan Africa (SSA) are an indicator of more fundamental structural problems in the economy rather than due to external debt"(IMF, 1989:6). However, cross-country studies on Sub-Saharan Africa (SSA) have generally recognised that debt and debt service payments have important influence on economic performance[3]. While this may be the case for SSA, very little is known about this relationship in Zambia. The motivation for this study was therefore to relate to the assumption that external debt negates investment and economic growth by focussing on the Zambian context. In so doing, the current study agrees with Kandiyoti that "country focussed research and analysis can help capture the nature of the national context" (1988:285).

Second, while some partial studies have claimed the existence of a depressing effect of external debt on economic growth in Zambia[4], to date, no rigorous formal study has been conducted to ascertain this relationship. As a matter of fact, while several national and global movements have actively advocated for a significant debt reduction and even outright cancellation of external debt of developing countries like Zambia, they need the support of rigorous analytical studies to substantiate their case. Therefore, this study also aimed at providing one in the case of Zambia by demonstrating the effect of external debt on growth. On this basis, this study not only responded to a felt need to fill the existing

[3] See for instance Iyoha (1999).
[4] See for instance Seshamani et al (1999) and Kapijimpanga (1996).

gap in the literature on debt and growth in Zambia but also meant to aid advocacy work around debt reduction. Within this context, the study revealed the uniqueness of Zambia's debt-growth relationship and the need to evolve country specific strategies aimed at achieving debt sustainability. In so doing, the study contributes towards policy information and areas for further research. Most fundamentally, it contributes to actions to improve the conditions of ordinary citizens. As Bello has stated, "there is need to harmonise research, policy and action to improve the conditions of ordinary citizens" (1996:302).

1.4 Objectives of the Study

The main objective of the study was to investigate the effect of external debt on economic growth in Zambia. The findings were expected to reveal if external debt reduce investment and thus depress the economy. The aim was to link findings to policy action and it was hoped that this would make formulation and implementation of debt relief strategies more responsive to country needs. More specifically, the study objectives were:

(i) To examine how Zambia's economic growth performance between 1975 and 2000 was linked with the external debt and debt service obligations.

(ii) To empirically investigate the effects of external debt and debt service obligations on investment and economic growth in Zambia.

(iii) To contribute to policy information and formulation on debt reduction for the future.

1.5 Hypothesis of the Study

The study tested the hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP).

1.6 Study Methodology

The study used the deductive method of analysis. Deductive analysis begins with general observations and builds towards specific patterns (Moonilal, 1998:11).[5] The study combined both qualitative and quantitative research approaches and relied on secondary data. On this basis, the study methodology involved two stages: First, a review of important documents that shed light on external debt and growth. This review was both general and specific to the situation in Zambia. The data sources for this review included: related books, articles, journals, pieces of legislation, policy documents, published and unpublished papers and documents from the University of Zambia library, Ministry of Finance and the Central Statistics office as well as from the Internet.

Second, the study hypothesis was tested econometrically. Thus, in line with previous studies on external debt and growth, e.g. Iyoha (1999), Krugman 1988 and Elbadawi *et al.*, (1996), a two equation econometric model that captures the effect of external debt on growth was specified. On this basis, a two-stage least squares (2SLS) regression method was used to estimate the model. The overall significance of each equation of the model was then tested as well as the individual coefficients to determine the validity of the study hypothesis.

Data for estimation of the model were obtained from the Ministry of Finance and Economic Development, Central Statistics Office, the Bank of Zambia and the World Bank online database on world debt tables. Specifically, interest rate data were obtained from the Bank of Zambia's Annual Reports. Labour force and population data were obtained from various publications of the Central Statistics Office; real output, investment and external debt data were obtained from the Ministry of Finance and Economic Development and the World Bank's publications and online databases. Data processing was done using the PC Give Statistical package, professional series version 8.0.

[5] Deductive method is a contrast to the inductive approach (Moonilal, 1998:11).

1.7 Scope and Limitation of the Study

The study was not without limitations, however. First, it focused on external debt and assumed away the effect of internal (domestic) debt on economic growth. Second, the non-availability of data on preferred variables, specifically those relating to average productivity of capital, limited the choice of proxies to the use of the per capita gross domestic investment. Besides, a 'stationarity' assumption was made for the time series data used. Admittedly, a comprehensive study into the subject of external debt and economic growth would be a mammoth task requiring time and resources beyond what was available for this study. The scope of the study was therefore restricted to assessing the impact of external debt and debt servicing on investment and economic growth in Zambia.

1.8 Structure of the Study

The study is organised as follows: Chapter two examines how Zambia's economic growth performance during the period 1975 to 2000 was linked with the external debt and debt service obligations and highlights the structure and composition of this debt. The idea was that to be able to understand the impact of external debt on the Zambian economy, it is important to examine the links between the developments in the Zambian economy and the influence of the country's external debt. This was the motivation for chapter two which provides the background and context within which the study is located.

A major issue in the study was to investigate how external debt influences investment and economic growth in Zambia. In chapter three, therefore, both theoretical and empirical literature relating to external debt and growth was reviewed. Based on the discovered existing gaps in the literature on external debt and growth and the need to respond to a felt need for significant debt reduction in Zambia, a conceptual and analytical framework relevant to motivation of the study was specified.

How then were research findings explained? This is the subject of chapter five which operated within the laid conceptual and analytical infrastructure of chapter three to discuss the study findings and tease out policy implications. Chapter six concludes the study. It provides a summary of the study findings, conclusions and a brief outline and discussion of the policy implications of the study findings.

2.0 Zambia's External Debt and Economic Growth Performance

2.1 Introduction

Zambia's economic growth performance has been largely chequered beginning with modestly high growth rates and fairly rapid general development between 1964 and 1973, but sliding into low growth thereafter. As Masiye and Wake (2005:1) writes, "the period between 1975 and 2000 has been characterised by low growth, rising poverty and major economic reforms". Incidentally, Zambia's chequered growth path is associated with a rising external debt problem.

The two rounds of oils shocks in 1973/4 and 1979, declining terms of trade and low export earnings resulted in a balance of payment disequilibria that conditioned a surge in external borrowing during the period 1975 to 1982(Mwanza, 1992:9). By 1983, Zambia's economic situation further worsened, leading the country to agree to a World Bank supported Structural Adjustment Programme (SAP) with an explicit conditionality to service external debt at the International Monetary Fund (IMF) and World Bank prescribed rate. However, this agreement was abandoned in 1987 when servicing external debt at the prescribed rate became too distressful for Zambia (Mwanza, 1992:14).

A regime change in government administration in 1991 enabled Zambia to make a fresh commitment to economic policy reforms and assure consistent debt servicing. Broadly, therefore, these debt-induced economic development contours between 1975 and 2000 informed this chapter's division of the study period into three sub-periods, namely; 1975-1982; 1983-1990 and 1991-2000[6].

[6] This sub-division is also consistent with other studies on Zambia's economic development pathway. See for instance, Masiye and Wake (2005), Fundanga (2000), Mwanza (1992). The period between 1964 and 1974 was left out of the reference period due to insufficient evidence to suggest that external debt influenced economic performance in this period. Therefore, only cursory reference is made to this period in the discussion.

Essentially, therefore, the study covered the period 1975 to 2000 because the origins of Zambia's debt problem can be traced to the well-known dual shocks of the Mid-1970s and at the time the study was undertaken (2001-2002), 2000 was the latest year for which the data was available.

In line with the study's first objective, the purpose of this chapter was to examine how Zambia's economic growth performance between 1975 and 2000 was linked with the external debt and debt service obligations. This examination provides both background and context to the whole study. Accordingly, the next section focuses on the period 1975 to 1982. Section three focuses on the period 1983 to 1990 while section four focuses on the period 1991 to 2000. Section five examines the structure and composition of Zambia's debt. The motivation of section five was to understand why Zambia's debt service payments remained high despite efforts at debt relief. The section also makes a case for debt reduction to go beyond previous initiatives if it is to be meaningful. The last section summarises the chapter.

2.2 External Debt and Economic Growth Performance, 1975 - 1982

The inter-relationship between external debt and economic performance during the period 1975 to 1982 became evident around 1982 when the deep global recession of 1981/82 made it impossible for Zambia to generate sufficient revenue to pay back the loans contracted during the 1973/74 oil shocks (Musona, Mungule and Seshamani, 1999:28). Initially, an easier option would seem to have been to resort to servicing part of the contracted debt. However, interest on existing loans increased by about 75 percent in real terms by 1982, further dampening prospects for swift debt repayment (UNCTAD, 1988:19). As the United Nations Conference on Trade and Development reports, "while world commodity prices dropped by about 28 percent in 1981/2, interest payments on loans increased by between 50 percent and 75 percent during the same period"(1988:19). The rising external debt service obligations in a context of declining terms of trade acted

to shift the country's BOP position from a surplus recorded in the period 1964 to 1974 to a deficit of US$ 396.1 million (which represented 12.4 percent of Gross Domestic Product (GDP) in the period 1975 to 1982).

Incidentally, declining terms of trade and a rising debt problem correlated with poor macroeconomic performance during the period 1975 to 1982. Table 2.1 shows the trend in terms of trade for the period 1975 to 1982 while Table 2.2 captures trends in key performance indicators.

Table 2.1: Trends in Zambia's Terms of Trade, 1975 - 1982 (1978=100)

Year	Export Price Index	Import Price Index	Terms of Trade
1975	84	194	43
1976	100	217	46
1977	97	248	34
1978	103	299	35
1979	185	374	50
1980	201	486	41
1981	198	584	31
1982	155	700	22

Source: GRZ Economic Report (1982)

Table 2.2: Economic Indicators[7], 1964 -1974[8] and 1975-1982

	1964 -1974	1975-82
External Debt (US $ billion)	1	3.7
Current A/C deficit (US$ million)	*	-396.1
Real GDP Growth rate (%)	2.7	0.8
Real Investment Growth Rate (%)	2.3	-3.1
Inflation Rate (%)	7	14

Source: *International Finance Statistics (2001).*

[7] Period averages are used. These are computed on the basis of available annual data.
[8] *Indicates that comparable data was not readily available.

From Table 2.1, it can be seen that Zambia's terms of trade declined from 43 points in 1975 to 22 points in 1982. Only in 1979 did the terms of trade improve but the trend was not sustained. A further inspection of the table reveals that the rate of decline increased markedly after 1980. Thus, between 1981 and 1982, the export price index fell by 43 percent while the import price index increased by 116 percent.

From Table 2.2, it can be seen that external debt rose from a period average of US$1 billion between 1964 and 1974 to US$3.7 billion in the period 1975 to 1982. On the other hand, economic performance took a downswing as real GDP growth rate dropped from 2.7 percent in the period 1964 to 1974 to 0.8 percent in the period 1975 to 1982. Similarly, the real rate of investment growth dropped by -3.1 percent over the same period. On the other hand, the rate of inflation doubled up to 14 percent.

How then did developments in this period specifically contribute to reduction in investment and thereby to lower growth? Analysis of the information from tables 2.1 and 2.2 points to the following likely transmission mechanism: mounting external debt and debt service obligations in the context of declining terms of trade led to a precarious Balance of Payment (BOP) position that in turn constrained capital investment as well as capacity utilisation in the productive sector. When this happened, import-dependent industries that dominated the productive sector at the time experienced under utilisation of capacity, leading to low industrial and national output. Therefore, as external debt and debt service obligations rose, investment fell and this in turn lowered the rate of economic growth.

2.3 External Debt and Economic Growth Performance, 1983 - 1990

In 1983, the Zambian government agreed to a more comprehensive IMF and World Bank supported Structural Adjustment Programme (SAP) in an attempt to redress the declining economic situation. This decision marked the beginning of another scene in the dramaturgy of external debt and economic growth performance in Zambia. Notably, as

part of the conditionality for the support, the Zambian government agreed to liberalise trade, devalue the currency, remove food and input price controls and tighten government spending (Mwanza, 1992:14). More specifically, Zambia agreed to service the mounting *external debt at the International Monetary Fund (IMF) and World Bank (WB) prescribed* rate.

However, five years down the road, Mwanza writes that "the Zambian government felt that the country would not achieve any meaningful economic growth if it continued to service the external debt at the IMF and World Bank prescribed rate"(1992:14). On May 1 1987, therefore, the Zambian government suspended the IMF and World Bank supported programme and announced the implementation of a "home-grown" New Economic Recovery Programme (NERP) under the theme of "growth from own resources"(Mwanza, 1992:18).

Many scholars have observed that the NERP was similar in many respects to the IMF - supported adjustment programme as it emphasised economic diversification, import dependence reduction, export promotion and economic stabilisation through inflation control[9]. However, Mwanza (1992:19) observes that "the major difference was in the re-introducing of government controls and the limiting of debt servicing to 10 percent of the net foreign exchange earnings."

Thus, on the basis of the NERP, an Interim National Development Plan (INDP) was drawn up to cover 18 months, starting from July 1987 to 31st December 1988. The main objectives of the INDP were: -

a) Reduction of imports and limitation of debt service payments;
b) Economic diversification, capacity utilisation and employment creation;
c) Economic stabilisation through inflation control; and
d) Improvement of government administrative capacity, e.g. better targeting of subsidies.

[9] See for instance Aron and Elbadawi (1992);

The immediate impact of the NERP on the economy was mixed. After almost a decade of economic decline, a positive GDP growth rate of 6.7 percent was recorded in 1988. However, others have attributed this positive growth to good weather experienced that year. On the contrary, Mwanza (1992:20) has attributed this positive result to increased allocation of foreign exchange to growth sectors caused in part by debt service limitation. If it is indeed true that the debt service limitation contributed to positive economic growth performance it might as well be argued that debt service was inherently disruptive of economic growth.

But the NERP failed in a number of crucial areas. For instance, although inflation dropped from its peak of 60 percent before NERP to 40 percent during the initial period of NERP, it rapidly increased to 60 percent at the end of 1988. According to the Bank of Zambia, the main cause of this inflationary pressure was the large budget deficit[10] (Bank of Zambia, Annual Report, 1989:22). In addition, Seshamani (1997:15) observes that "the loss of confidence in the Zambian economy by creditor agencies and bilateral donors deepened following the government's decision to restrict debt servicing to 10 percent of export earnings." On this basis, the IMF declared Zambia a bad debtor and, therefore, ineligible for more donor support.

The declaration of Zambia as a bad debtor by the IMF adversely affected the inflow of foreign financial resources and direct investment into the country. This was because the international community reduced substantially the disbursement of aid to Zambia. Consequently, the national economy, whose significant source of finance was increasingly becoming highly dependent on the support and good will of the international community, took a further downswing. Looked at squarely, this economic downturn would seem to find an originating process in the influences of external debt through the power and control of the IMF/World Bank and the international club of creditor countries. It is largely as a result of this development and the rapid accumulation of

[10] Although the budget deficit had been reduced from 30 percent of Gross National Product (GNP) in 1986 to 14 percent in 1987 and 9.7 percent in 1988.

payment arrears that the external debt peaked in 1990 at US$ 7.2 billion or 260 percent of GDP.

Table 2.3 below compares economic performance in the period 1983 to 1990 with the previous period of 1975 to 1982 to illustrate the linkage between Zambia's mounting external debt and economic performance.

Table 2.3

Zambia's Macroeconomic Performance Indicators (1975 - 1982 and 1983-90)[11]

Period	1975-82	1983-90
Current A/C Surplus (deficit):		
US$(million)	-396.1	-256.2
% of GDP	-12.4	-10.2
External debt outstanding:		
US$ (Billion)	3.7	6.5
% of GDP	82.0	215.1
Real GDP growth rate (%):	0.8	0.4
Investment:		
% of GDP	21.9	10.9
Real growth rate (%)	-3.1	-8.7
Inflation Rate (%)	14.0	57.4

Source: International Finance Statistics (2001)

[11] Values are annual averages.

On the whole, it can be seen from Table 2.3 that as the external debt jumped from a period average of US $3.7 billion in the period 1975 to1982 to US$ 6.5 billion in the period 1983 to 1990, economic growth performance further worsened[12]. GDP growth rate remained below 1 percent, dropping further to 0.4 percent. Investment registered a sharp decrease with its share in GDP falling to 10.9 percent while its real growth rate declined to -8.7 percent. Precipitated mainly by increased production costs due to raw material import bills on the one hand, and deficit financing on the other, inflation quadrupled to a period average of 57.4%.

In other words, the debt- induced economic developments in the period 1983 to 1990 served to accentuate the inter-relationship between external debt and economic growth, making it more discernable. Most certainly, the decision by the government to abandon external debt service payments in 1987 discredited the Zambian government in the international development community, leading to withholding of external development support. When this happened, direct investment flows withered, leading to declined national output since the national economy had increasingly become dependent on donor support. Meanwhile, the total debt stock increased further because of the interest-on-interest charges that had to be paid for breach of contract to pay on time.

Towards the end of this period, however, attempts were made by the Zambian government for a compromise with the IMF with whom links had been severed in May 1987 and to forge a "shadow agreement" with the multilateral institution. From July 1989 onwards, the country's regime began to change in a manner that increasingly substituted flexibility in place of controls. Political developments, however, inhibited the pace of change towards the intended full-scale liberalisation (Seshamani, 1997:14).

[12] Notice that the external debt outstanding almost doubled to a staggering period average of US$ 6.5 billion, accounting for 215 percent of GDP.

2.4 External Debt and Economic Growth Performance, 1991 – 2000

In October of 1991, there was a regime change in government administration that enabled wholesome commitment to a 'new generation' of IMF and World Bank inspired economic reforms. The new government administration (1991-2001) headed by President Fredrick Chiluba agreed to implement sweeping reforms - along side guaranteeing consistent debt service. This was done through such measures as freeing up major markets of the economy, restructuring and reducing the country's external debt, restoring Zambia's standing in the international financial community, and rationalising the role of the public sector and privatising state-owned enterprises (Bank of Zambia, 1992:4). These reforms were more structural in nature and expected to contribute to expenditure compression as a vital element of the fiscal policy stance aimed at achieving BOP stability (Seshamani, 1999:15). Stability in BOP position would in turn create the pre-condition for recovery in investment and economic growth.

At the same time, the country committed itself to improved debt servicing while pursuing debt relief through bilateral negotiations and the Heavily Indebted Poor Countries (HIPC) initiative to which the country qualified in December 2000 (Bank of Zambia, Annual Report, 2000:16). It needs also to be mentioned that,

> By the end of 1995, Zambia completed the IMF's Rights Accumulation Programme (RAP), designed by the IMF for the first time specifically to assist Zambia. Due to Zambia's earlier breakaway from the IMF, she had become ineligible to use IMF's resources since October 1987. And by July 1992, Zambia's arrears to the IMF had piled up close to US$1.4 billion. In view of the earnestness of the government to implement policy reforms, the IMF designed a Rights Accumulation Programme (RAP) whereby Zambia could accumulate rights for up to a maximum of Special Drawing Rights (SDR) 836.9 million. The accumulation was contingent upon Zambia fulfilling certain monetary targets set by the IMF every quarter. Zambia completed the programme by December 1995 although the original target date for completion was March 1996. As a result, the IMF lifted her

ineligibility to use IMF's resources on 6 December 1995 and approved loans for her totalling SDR 830.2 (Seshamani, 1997:9).

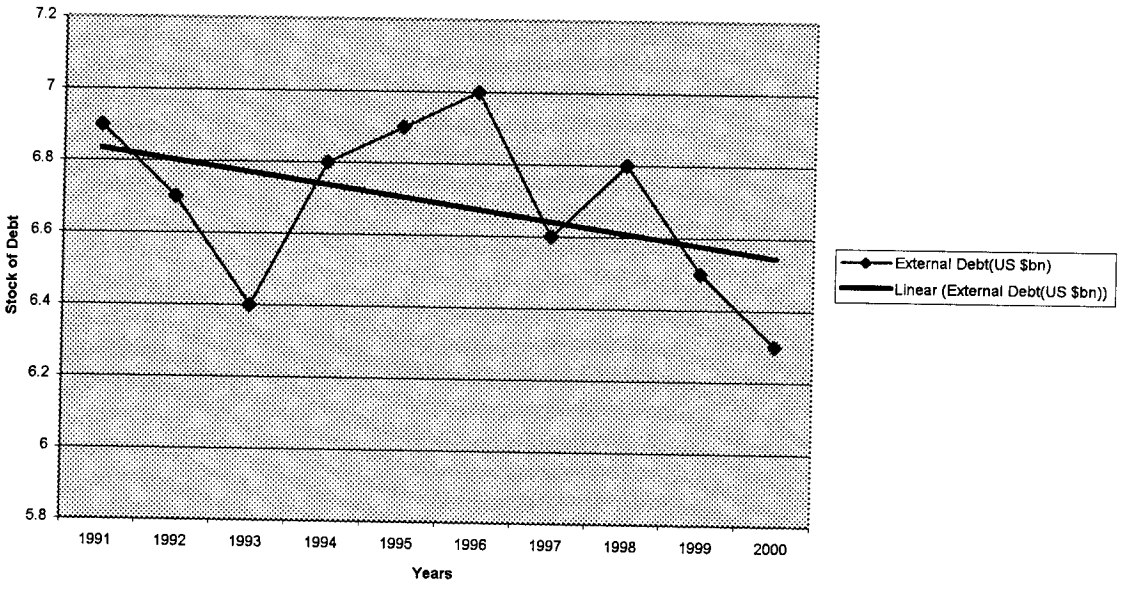
Thus, following government's commitment to policy reforms and consistent debt servicing under the RAP, actual debt service payments increased from US$353 million in 1992 to US$2,613 million in 1995 although dropping to US$254 million in 1996 but increasing again to US$268 million in 1997 (Musona, Mungule and Seshamani, 1999:23). The sharp fall in actual debt service in 1996 was due to the Paris Club Agreement of 1996 under which a significant debt write-off and debt rescheduling with bilateral creditors was effected (Bank of Zambia, Annual Report, 1999:10). Table 2.4 shows trends in external debt stock and debt service payment during this period. Figure 2.1 graphically illustrates trends in external debt in the period 1991 to 2000.

Table 2.4: Trends in External Debt and Debt Service Payments, 1991-2000

Year	External Debt (US$ billion)	Debt Service Payments (US$ million)
1991	6.9	202
1992	6.7	353
1993	6.4	364
1994	6.8	373
1995	6.9	2,613
1996	7.0	254
1997	6.6	268
1998	6.8	131.9
1999	6.5	153.8
2000	6.3	169

Source: Global Development Finance (2000)

Figure 2.1: External Debt Trends, 1991-2000



Source: Author

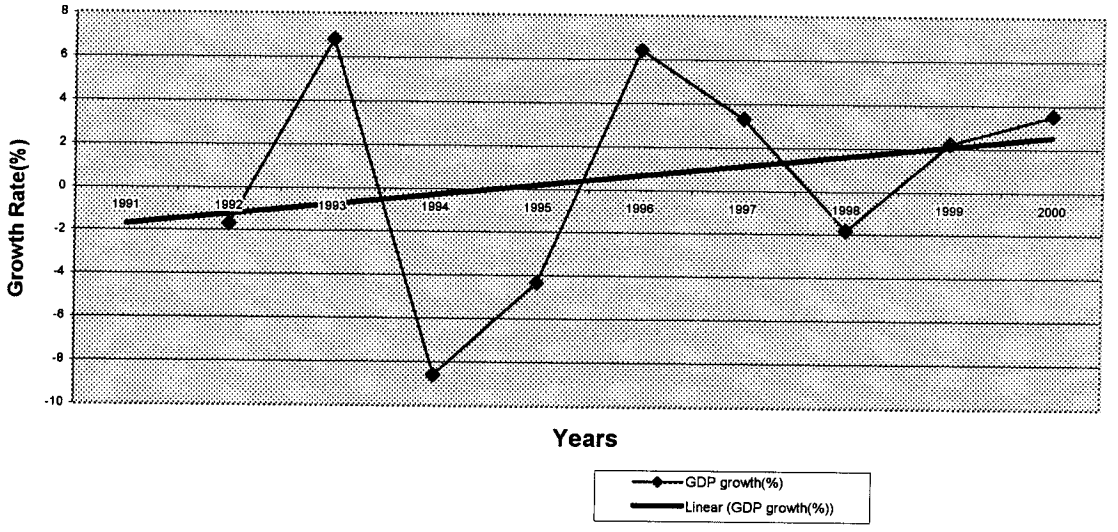
From Table 2.4 and figure 2.1 it is noticeable that the external debt had assumed a downward trend in the period 1991 to 2000, albeit only marginally, in real terms. Equally, it is the case that commitment to debt servicing had been consistent, with debt service payments rising steadily from about US$ 202 million in 1991 to a high of US $2,613 million in 1995 before declining to US US$169 million in 2000. How then did economic growth performance specifically relate to this external debt and debt service outcome? Table 2.5 captures the macroeconomics performance indicators in this period and compares this with the performance of the previous period, 1983 to 1991. Figure 2.2 graphically illustrates the trend in GDP growth rates in the period 1991 to 2000 and constructs a trend line therein.

Table 2.5: Zambia's Economic Performance, 1983-90 and 1991 - 2000)[13]

Period	1983-1990	1991-2000
Current A/C Surplus (deficit):		
US$(million)	(256.2)	(236.2)
% of GDP	(10.2)	(7.2)
External debt outstanding:		
US$ (Billion)	6.5	6.4
% of GDP	215.1	226
Real GDP growth rate (%):	0.4	0.6
Investment:		
% of GDP	10.9	14.5
Real growth rate (%)	-8.7	-5.3
Inflation Rate (%)	57.4	72

Source: International Finance Statistics (2001)

Figure 2.2: GDP growth(%),1991-2000



From Table 2.5 above, it is the case that macroeconomic performance in the period 1991 to 2000 was characterised by modest improvements. Noticeably, with a declining

[13] Values are annual averages.

external debt stock and commitment to consistent debt servicing, the country's BOP position improved to a deficit of US$ 236.2, which represented 7.2 percent of GDP. The Central Bank of Zambia attributes this improved BOP position to the increased inflow of BOP and project support, portfolio and foreign direct investments (Bank of Zambia, Annual Report, 1999:9).

Meanwhile, real GDP growth rate increased to 0.6 percent from a previous period average of 0.4 percent. The trend in GDP growth rate was generally positive as seen in an upward sloping trend line in figure 2.2. Notice further from Table 2.5 that investment's share in GDP increased to 14.5 percent and its real growth rate increased, though marginally, from –8.7 percent to -5.3 percent. Significant gains were achieved in containing the hyperinflation that was prevailing during the initial years of the period (Seshamani, 1997:18). However, the average inflation rate for the period increased to 72 percent. Nevertheless, decreased external borrowing necessitated by an improving BOP situation led to a decrease in the external debt to US$6.4 billion or 226% of GDP.

In short, the period 1991 and 2000 confirms further the intimate relationship between external debt and economic growth performance. During this period, external debt declined and consistent servicing brought about a good will that enabled the inflow of increased BOP support as well as portfolio and foreign direct investment resources. Correspondingly, investment and economic growth performance registered modest improvements.

However, the marginal decline of Zambia's external debt over the period 1991 to 2000 despite international efforts at debt relief still leaves some troubling questions as to whether the country could fully benefit from existing debt relief measures. In 1996, for instance, a significant debt write-off and debt rescheduling with bilateral creditors was effected. Nonetheless, the country's debt service payment still remained relatively high.

The next section looks at the nature of Zambia's external debt to shade some light on why debt service payments for Zambia still remained high despite existing efforts at debt relief.

2.5 Structure and Composition of Zambia's Debt

In terms of its structure, Zambia's debt is dominated by public and publicly guaranteed debt that is mostly from official sources. As Mwanza (1992:22) writes, "borrowing from private sources fell at an annual average of 21.6 percent during the period 1980 to 1988". By 1989, only 7.14 percent of external borrowing was contracted with private sources. The composition of Zambia's external debt during the period 1975 to 2000 was, therefore, mainly bilateral, multilateral and private or parastatal as shown in Table 2.6.

Table 2.6: Structure of Zambia's External Debt (US$ million), 1975 – 2000

	1975[14]	1980	1985	1990	1995	2000
Bilateral	-	1105	1802	2957	3213	2390
Multilateral	-	844	1524	2367	1646	3447
Private/Parastatal	-	586	675	2563	2827	473
Total	**654**	**2535**	**4001**	**7242**	**6381**	**6310**

Source: Ministry of Finance and National Planning (2000:26); World Bank (2000)

From Table 2.6, it can be seen that bilateral debt remained by and large stable between 1980 and 2000, varying over the years between 44 percent and 50 percent of the total debt. Over the same period, multilateral debt (including IMF debts) experienced the most rapid growth. As a component of total debt, their percentage rose from 33 percent in 1980 to 55 percent in 2000. According to Musona, Mungule and Seshamani (1999:28),

[14] The figure used here is for 1970. Data for 1975 was not available. Besides, external debt data available at the time did not disaggregate into the finer categories such as multilateral and bilateral which became available in subsequent years. Dis-aggregation was only available up to two broad categories: publicly guaranteed debt amounting US$624 million and private debt of US$30 million, bringing the total to US$654 million.

multilateral debts were the most problematic as they could not be rescheduled or cancelled and took precedence over other debts. Private and parastatal debts, which are broadly commercial loans[15] assumed an upward trend between 1980 and 1990 but thereafter assumed a declining trend. Thus, Zambia's external debt only marginally declined despite existing debt relief measures, especially in the 1990s, mainly because of its nature of being public and publicly guaranteed which limited the options for available debt relief. Future debt relief would therefore need to take this reality into consideration.

That the country's external debt exerted great pressure on the economy during the period under study could also be illustrated by the extremely unfavourable debt ratio trends. As Table 2.7 shows, between 1975 and 2000, the total debt outstanding - to - export ratio rose from 191.2 percent to 600.9 percent; the total debt outstanding - to - GDP ratio rose from 68.9 percent to 287 percent; and the debt service - to - export ratio rose from 19.2 percent to 186.2 percent in 1995 although declining to 18.3 percent in 2000 due to partial debt cancellation and debt rescheduling that had taken place.

Table 2.7: Trends in Zambia's Debt Ratios (%), 1975 - 2000

	1975	1980	1985	1990	1995	2000
Debt Outstanding to Export	191.2	200	477.6	541.0	487.5	600.9
Debt Outstanding to GNP	68.9	83.9	203.1	220.8	207.7	287
Debt Service to Export	19.2	25.2	14.3	15	186.2	18.3

Source: World Bank (2000).

[15] These loans constituted the export and supplier credits which were guaranteed by the creditor government and for which the Zambian government also provided repayment guarantees on behalf of various institutions or companies in Zambia.

2.6 Summation

In summation, this chapter served to provide the background and context of the study by examining the relationship between external debt and economic performance in Zambia during the period 1975 to 2000, and underscoring this with an examination of the structure, composition and severity of Zambia's external debt. From this examination, the correlation between external debt, investment and economic growth performance seemed apparent throughout the period 1975 to 2000.

It was found that during the period 1975 to 1982, the deterioration in the country's terms of trade shifted the country's BOP from a surplus to a deficit position. To sustain the deteriorating BOP position, the country resorted to borrowing heavily from foreign sources. The inevitable result of foreign borrowing in the face of falling export revenues and rising interest payments on existing loans was the emergence and growth of the external debt. When this happened, investment fell, thereby leading to lower growth.

In the period 1983 to 1990, the suspension of an IMF - supported structural adjustment programme and the replacement of the same by a "home grown" programme, NERP, whose key policy thrust was to limit debt servicing to 10 percent of export earnings, subsequently led to the build up of payment arrears and the burgeoning of external debt. When this happened, investment performance and economic growth recorded further declines.

Finally, the radical economic reforms of the period 1991 to 2000 attempted to arrest the deteriorating economic situation by agreeing to radical economic reform and strong commitments to reducing the country's external debt. However, after ten years of consistent debt servicing between 1991 and 2000, the external debt only marginally reduced to US$6.3 billion from US$7.2 billion - raising further troubling questions about the adequacy of existing debt relief measures. Nonetheless, modest improvements in economic performance were observed with both investment and GDP growth recording positive increases. This may suggest, other things being equal, that without the burden of

debt and debt servicing, economic performance could improve. The chapter also revealed the nature of Zambia's external debt as being largely public and publicly guaranteed - thereby limiting the options available for debt relief. Overall, the chapter has shown how external debt and economic growth related in the context of Zambia over the period 1975 to 2000. Building on this background, the next chapter undertakes a review of existing literature to identify existing gaps in the literature on external debt and growth as well to provide the conceptual and analytical framework for the study on Zambia.

3.0 Literature Review

3.1 Introduction

This chapter reviews the main theoretical and empirical literature on external debt and economic growth. It starts by reviewing neoclassical models of growth and investment developed by Solow (1956) and Jorgensen (1963), respectively, in order to identify the roots of the debt-growth model that informed this study's conceptual and analytical framework. The chapter then reviews theoretical and empirical literature specific to the relationship between external debt and economic growth. The chapter is organised as follows: the next section reviews the Solow growth model and the Jorgensen investment model, including modifications to these models as found in the recent empirical literature on external debt and growth. Sections three and four specifically focus on theoretical and empirical literature on external debt and economic growth, respectively. Section five synthesises the literature reviewed.

3.2 Conceptual and Analytical Framework

3.2.1 Solow Growth Model

Professor Robert Solow[16] was among the earliest scholars to apply the production function model to the study of growth problems and by so doing he improved on the existing models of economic growth. With reference to the Harrod-Domar model[17], for instance, the Solow growth model shows, among other things, that the razor's-edge growth path of the Harrod-Domar model was primarily a result of the particular production-function adopted therein and that, under alternative circumstances, the need for delicate balancing might not arise (Solow, 1956:70).

---

[16] See Robert M. Solow, "A Contribution to the Theory of Economic Growth," *Quarterly Journal of Economics, 1956: 65-94.*

[17] See Evsey D. Domar, "Capital Expansion, Rate of Growth, and Employment," *Econometrica,* April, 1946:137-147.

More specifically, Solow's growth model explains the growth in an economy by breaking down the aggregate output (Y or GDP) into contributions of growth inputs (labour, capital, and technology). That is, the model explains how much of the growth in an economy is explained by changes in the amount of labour or by changes in the amount of capital. The general model is described by the following equation:

$$Y(t) = A(t) \times K(t)^{\alpha} \times L(t)^{1-\alpha}$$

Where,

- Y is aggregate output of the economy in year (t) usually measured by GDP,
- A is an index of the level of technology,
- K is the stock of capital in the economy,
- L is the amount of labour in the economy usually measured by hours worked by an index of labour efficiency
- α is the contribution of capital to aggregate output Y.

All of these variables can be observed by looking at economic indices of each country except A. However, the equation can be solved for A and, thus, the contribution of technological improvements to the economy determined. Alpha (α) is the share of output that is paid to owners of capital in the form of rents. In the model, capital includes machinery, equipment, land and natural resources. The remainder, $1-\alpha$, is the share of output paid to workers in the form of wages. The index of the level of technology (A) is also known as Total Factor Productivity (TFP) and includes generally changes in the level of technology, presence of strong institutions, and regulatory environment. The equation has constant returns to scale, which means that the contribution of capital and labour to aggregate output will always add up to one.

Solow noted that any increase in output (Y) could come from one of the three sources: an increase in L (however, due to diminishing returns to scale, this would imply a reduction in Y/L or output per worker), an increase in K (which would increase both output and Y/L) and an increase in A (which could also increase Y/L or output per worker).

Notice that the above equation can be transformed by taking the logarithm and partial derivatives to arrive at a simpler form:

$\%\Delta Y = \%\Delta TFP + (\alpha) \times (\%\Delta K) + (1-\alpha) \times (\%\Delta L)$,

This simply expresses changes in output, technology, capital, and labor in percentage changes.

In addition, in order to concentrate attention on what happens to Y/L or output per worker (and hence, output per capita), Solow rewrote the Cobb-Douglas production function in what can be referred to as the per capita form of the Solow growth model. A standard version of the per capita Solow model is presented as:

$$y = Ak^{\alpha}$$

Where A: state of production technology
y: per capita output
k: per capita capital stock

In summary, the Solow growth model states that increases in output (or economic growth) can be achieved by increases in capital, labour and total factor productivity. Accordingly, increases in capital and labour are categorised as an expansion of the economy. That is, if the economy increases its capital stock and its labour hours, say by 2%, then aggregate output will expand by 2% as well. On this basis, the model makes two major predictions: i) that growth will be strong when countries first begin to accumulate capital and will slow down as the process of accumulation continues, and ii) countries will tend to converge in output per capita and in standard of living. When all countries have reached a steady –state, all countries will have the same standard of living (at least if they have the same production function). However, the Solow model posits that the more difficult task is increasing the total factor productivity, which will raise the standard of living of the population. According to the model, increasing total factor

productivity takes a longer time horizon because it involves increasing the technological level, transforming institutions, de-regulating the economy, and improving education.

3.2.2 Jorgensen's Investment Model

Turning to investment theory, it must be pointed out that integrating investment (a flow concept) with stock-based capital and production theory has always been a troublesome issue for neoclassical theory. However, Dale W. Jorgensen's (1963) investment demand model made a fair attempt at resolving this difficult and for this reason, recent works on external debt and growth have built on his investment demand function to study the influence of external debt on investment. Rooted in neoclassical optimization theory, the major assumption of the Jorgensen investment model is that investment ought to be conceived in the context of the maximization of the present value of the firm.

Effectively, Jorgensen's solution was to steal a leaf from the consumption book and recast the optimal capital stock decision in inter-temporal form. The model posits that firms attempted to choose an inter-temporal path for capital stock that maximized the present value of the firm - i.e. the present value of a stream of proceeds. Thus, in general, the model posits that firms face the following inter-temporal optimization problem:

$$\max V = \int_0^{\infty} [p_t Y_t - s_t I_t - w_t N_t] \, e^{-rt} \, dt$$

s.t.

$$Y_t = F(K_t, N_t)$$

$$dK_t/dt = I_t - \delta K_t$$

Where (suppressing time subcripts) they are maximizing a stream of returns (defined as total sale revenue, pY, minus wage costs, wN, and investment costs; sI, where s is defined as the supply price of investment) subject to a production function constraint, Y = F(K, N) and the definition of net investment, dK/dt. Solving this problem yields the

following conclusions: (1) $F_N = w/p$, firms employ labor until their marginal product is equal to their wage; and (2) the following holds:

$$pF_K = s[\delta + r - (ds/dt)/s]$$

so that the optimal capital stock K* is chosen where the marginal value product, pF_K is equal to the real user cost of capital, $c = s[\delta + r - (ds/dt)/s]$. This last term can be thought of as the implicit rental rate. The logic is that the cost of investing (i.e. buying another unit of capital) is the opportunity cost of lending out the funds (r), the depreciation per unit (δ) minus the expected capital gains (ds/dt)/s. Jorgensen posits that If we had an explicit invertible production function, then K* could be determined easily from $F_K = c/p$. For instance, suppose we had a Cobb-Douglas production function $Y = K^{\alpha} L^{(1-\alpha)}$ so that $F_K = \alpha (Y/K)$, then $K^* = p\alpha Y/c$. Thus, in general, $K^* = f(Y, p, r, \delta, s, ds/dt, p)$ or simply $K^* = f(Y, p, c)$ where K* depends positively on Y and p and negatively on c.

In this model, investment is defined as the instantaneous change in the *optimal* stock of capital, thus, in principle, there is no investment unless there is some reason to *change* the optimal stock of capital (by say, imposing exogenous some rate of technical change or some population growth rate), or, alternatively, investment is derived from the adjustment path *towards* the optimal capital stock, K*. Following the first case, suppose that $K_t^* \neq K_{t+1}^*$ for some reason. Then, in principle, moving to continuous time, from any given K, then investment is defined as $I = dK^* + \delta K$, thus:

$$I = f(dY, dp, dc) + \delta K$$

On this basis, investment in the Jorgensen model is a function of changes in the real user cost of capital (c), changes in the price of output (p), changes in output (Y) and the level of capital (K).

3.2.3 Modifications of Neoclassical Models to Accommodate Debt

Recent development literature, however, has made some modifications to the neoclassical growth and investment models to make explicit allowance for the influence of external debt in these models. Chenery and Strout (1966) made some modifications to the neoclassical output function, and emphasized the role of investment and the investment-income ratio. Similar modifications to the investment demand function have been made by Sachs (1988), Borenstein (1990), Chibber and Pahwa (1994) and Iyoha (1999). Within this context, Iyoha (1999) specifies an investment demand function that makes allowance for the potential existence of both a "debt overhang" and "crowding out" effect of external debt as follows:

$$I=f(dY, dP, dc, D/Y, DS/X) +\delta K$$

On this basis, investment is a function of changes in the real user cost of capital (c), changes in the price of output (p), changes in output (Y), changes in the level of capital, (K), the ratio of external debt to output (D/Y), and the ratio of total debt service to exports of goods and services (DS/X).

Further, in order to make explicit allowance for the interaction between external debt and economic growth, recent development literature specifies a simultaneous equation model. In particular, the per capita version of the output and the investment functions are considered as a system of simultaneous equations used to test whether external debt and economic growth are related. This combination and approach is becoming standard in the development literature and variations of this approach have been used by Oseghale and Amenikienan (1987), Ram (1996), Mjema (1996), Iyoha (1997a, 1997b, 1999) and Khan and Kumar (1993), Pattilo *et al* (2002). Therefore, as will be seen, this study followed along this line to specify a simultaneous equation model to investigate the relationship between external debt and economic growth in Zambia.

3.3 Theoretical Literature on External Debt and Growth

Regarding what the literature says about external debt and growth, Pattillo *et al* (2002:2) acknowledges that economic theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its economic growth. As such, countries at early stages of development have small stocks of capital and are likely to have investment opportunities with rates of return higher than those in advanced economies. As long as they use the borrowed funds for productive investment and do not suffer from macroeconomic instability, policies that distort economic incentives, or sizable adverse shocks, growth should increase and allow for timely debt repayments (Pattilo *et al*, 2002:2).

Within this context, Bird (1989) posits that while it is tautological to say that the acquisition of debt is a precondition for the emergence of a debt problem, it is important to note that debt acquisition need not lead to problems. Making a case for the benefits of borrowing, he observes that in many respects, the taking on of debt is an entirely rational and welfare-enhancing activity representing an inter-temporal redistribution of living standards. He contends that provided the rate of discount exceeds the rate of interest, borrowing now and repaying in future will raise welfare.

According to Bird (1989), the underlying logic of debt acquisition is reinforced by theories of life cycle consumption, where an individual or household may maximize welfare derived from a given lifetime income by going into debt at certain stages in the life cycle. From this standpoint, therefore, borrowing increases the financial and real resources currently available to the borrower. Whether it leads to problems depends on how these additional resources are used. According to Bird (1989), where the increase in current resources is used to enhance the availability of resources in the future, the acquisition of debt should be manageable and should not lead to problems in the sense of an inability to service the debt and to meet outstanding debt obligation.

In determining whether a debtor country will be able to service its debt, Bird (1989) further writes that three considerations are central. The first relates to the relationship between the marginal productivity of the resources borrowed and the rate of interest on the loan. The theory is that for as long as the marginal productivity exceeds the rate of interest, the loan may be serviced and some contribution made towards repaying the principal. Where, however, the rate of interest on the loan exceeds its marginal productivity, there will be debt-servicing problems and the debtor may be forced to take debt to meet existing obligations.

The second consideration relates to domestic saving. Bird (1989) writes that borrowing may be viewed as a way of closing a domestic savings gap between the savings required to finance investment, which is itself, needed to achieve a targeted growth rate, and the actual amount of domestic savings. Thus, if borrowing is necessitated by a deficiency of domestic savings, it follows that, to service and repay debts, there will have to be an excess of domestic saving over and above that needed for financing domestic investment. A crucial factor here will be what is happening to the domestic savings ratio. If the marginal propensity to save exceeds the average propensity to save, the savings ratio will rise. Other things being constant, a rising savings ratio will offer a better prospect that the debtor will be able to meet its obligations than if the ratio were falling.

However, it is not enough that additional domestic savings are generated. Since borrowing will have been conducted in foreign exchange, excess savings have to be converted or transferred into additional foreign exchange. In as much as borrowing is undertaken to close a foreign exchange gap, i.e. the gap between the foreign exchange needed to buy the imports that are in turn needed to achieve development and the foreign exchange earned through exporting, the repayment of the related debt requires that the borrowing country reverses this gap and moves into a current account surplus.

The third important consideration is therefore what is happening, and what is likely to happen to export earnings and import payments. Where a debtor faces deteriorating terms

of trade, it is more likely to encounter debt problems than where its terms of trade are improving.

Turning the leaf over, economic theory also explains why large levels of accumulated debt may lead to lower growth. The best-known explanation comes from 'debt overhang' and 'crowding out' hypotheses, which show that if there is some likelihood that, in the future, debt will be larger than the country's repayment ability, expected debt-service costs would discourage further domestic and foreign investment and thus harm growth (Pattilo *et al*, 2002:2). Potential investors will fear that the more a country produces, the more it will be "taxed" by creditors to service the external debt, and thus they will be less willing to incur costs today for the sake of increased output in the future. The implication is that large debt stocks lower growth by reducing investment (Cohen, 1993). But in addition, the incentive effects associated with debt stocks tend to reduce the benefits to be expected from policy reforms that would enhance efficiency and growth, such as trade liberalization and fiscal adjustment: the government will be less willing to incur current costs if it perceives that the future benefit in terms of higher output will accrue partly to foreign lenders (Pattilo *et al*, 2002:2).

Thus, recent economic literature has highlighted two different channels through which external debt impinge on economic growth: 'debt overhang' and 'crowding out'. As Serieux (1999:14) writes, debt overhang refers to the negative savings and investment effect that can potentially be generated by a heavy debt burden. This acts to lower the expected (after tax) return on savings and investment. Domestic savers and investors may see a high stock of debt as an indicator of the high future tax rates that will be needed to meet debt service requirements and may thus choose to invest their savings elsewhere, leading to capital flight. Foreign investors, in addition to being similarly discouraged by the prospect of future taxes, may be discouraged by the prospect of future currency depreciations that will lower the foreign exchange value of their investment.

Alternatively, they may be concerned about their ability to repatriate profits in the face of non-price rationing of foreign currency[18].

'Crowding out' effect means that a larger debt service discourages public investment, since it soaks up resources from government budget and reduces the amount of money available for productive investment (Clements *et al*, 2004). This argument can also be used with respect to the debt-poverty nexus, since debt service payments shrink total spending in poverty alleviation programmes and health and education services. Further, the crowding out effect is not only related to public investment, since a squeeze in public investment is likely to reduce private investment as well, given that private investment agents need investment in basic infrastructure to undertake their investment project (Iyoha, 1999:24).

From theoretical literature, therefore, it can be seen that external debt can have both benefits and costs to the borrowing economy. At reasonable levels of debt, further borrowing would be expected to have positive effects on growth. However, large accumulated debt stocks may be a hindrance to growth. Both these elements together imply that external debt has effects on growth.

3.4 Empirical Literature on External Debt and Growth

Much of the empirical evidence, however, is largely limited to testing of the 'debt overhang' and 'crowding out' effects. Still, there is not a general agreement and the relationship between debt and growth remains unclear (Moss and Chiang, 2003).

[18] The theoretical case for debt overhang has also been made by several authors, including Dooley (1986), Krugman (1988), Sachs (1989), Froot (1989) and Calvo (1989). Other useful surveys of the theoretical literature on the impact of debt in developing countries are: Drouin (1996), Goncalves (1996), Iyoha and Iyare (1994), Iyoha (1999), Kelly (1998), Seshamani (1999) and, Ferraro and Rosser (1994).

Cohen (1993) looks at 81 developing countries over the period 1965-87, rejecting the debt overhang hypothesis and supporting the crowding out effect. Cohen finds not significant the correlation between the debt to export ratio and the investment variable, while the debt service is significantly negatively correlated with investment: the point estimate of the crowding out effect is 0.35, which means that for every 3 percentage point of GDP transferred abroad in debt service payments, investment declines by 1 percentage point. His empirical findings, however, are based on sample of cross-country regressions. A deeper analysis in a country context would therefore be useful.

On the other hand, Partillo *et al.*, (2002) find evidence of the negative impact of debt on growth, since their estimates for 93 developing countries over the period 1969-98 show that large external debt reduces economic growth. The author use panel data set consisting of 630 observations and look at the effect that external debt has on GDP growth. Furthermore, they find that external debt has a negative effect mainly through the reduced efficiency of investment, rather than the volume of investment. These findings, however, are also based on a sample of cross-country regressions and do not seem to capture a specific country context.

Elbadawi and Ndung'u (2000)[19] used data for 15 African countries that could be characterised as conflict or post-conflict countries, and applying a two-equation (growth and investment) model, found that the debt overhang hypothesis was largely valid. Specifically they found that: 1) external debt overhang works directly and indirectly through growth and private investment and thus complicates the achievement of development goals; 2) debt overhang negatively affects private investment and per capita GDP; 3) Debt service has weak but negative effects on growth; 4) public investment strongly and positively stimulates growth and private investment; 5) lagged effects of both growth and private investment seemed powerful driving forces. This study, however, was based on a sample of conflict or post-conflict countries and so the findings may be inconclusive.

[19] Other researchers that have attempted to test the debt overhang effect empirically include Sachs (1989), Claessens (1990), Warner (1992), Degefe (1992), Savvides (1992), Chibber and Pahwa (1994) and Iyoha (1997a, 1997b)

Boreinsztein (1990) also provides an interesting attempt to test the debt overhang effect empirically. Using data for the Philippines, he found that the debt overhang hypothesis was largely valid. Specifically, he found that debt overhang had an adverse effect on private investment. The effect was strongest when private debt, rather than total debt, was used as a measure of the debt overhang. The crowding out hypothesis was, however, not tested in this study. A deeper analysis of the crowding out effect would be needed at the country level to confirm the hypothesis.

One study that has tested both the 'debt overhang' and 'crowding out' hypotheses is that by Iyoha (1999). The study investigated the impact of external debt on economic growth in Sub-Saharan Africa for the period 1970-1994. An important finding of this study was that mounting external debt depresses investment through both a debt overhang effect and a 'crowding out' effect. Policy simulation was also undertaken to investigate the impact of alternative debt stock reduction scenarios (debt reduction packages of 5%, 10%, 20% and 50%), on investment and economic growth in the subsequent years. It was found that debt stock reduction would have significantly increased investment and growth performance. For instance, a 20% debt stock reduction would, on average, have increased investment by 18% and increased GDP by 1% during the period 1987-1994.This empirical finding, however, is based on a sample of cross country regressions and should be tested using country level dataset.

Generally, studies that have shown favourable effects of external debt are rare. As quoted by Mutiso (2001), they include World Bank (1988) study for the period 1980 to 1986 and Chowdhurry (1994) for Bangladeshi and South Korea.

3.5 Summation: Towards a Framework of the Study

In summation, this literature review highlights many important issues surrounding the external debt and economic growth relationship. Firstly, it was established that neoclassical output and investment demand functions can usefully be used to understand

factors that lead to economic growth. However, recent modifications have been made to these neoclassical models to make explicit allowance for the treatment of the relationship between external debt, investment and growth. On this basis, a simultaneous equation model involving both the output and investment functions is usually specified. Regression analysis is then applied to test the effect of external debt on investment, and thus on economic growth.

The literature reviewed also suggests that foreign borrowing can have both benefits and costs. Thus, economic theory suggests that, at reasonable levels, borrowing would be expected to have a positive effect on growth. On the other hand, large accumulated debt stocks and debt service payments may be a hindrance to growth. Both these elements together imply that external debt is likely to have effects on economic growth. Existing empirical evidence on the impact of debt on growth still remains mixed.

A major weakness of the existing empirical evidence, however, is that much of it is based on cross-country datasets. As such, these works much be completed with a more country specific investigation which could show which are the effects of indebtedness on economic growth at a country level. Such a country specific study could help disentangle whether debt is a serious constraint to investment and economic growth and provide suggestions for debt relief mechanisms. Zambia, being a highly indebted poor country provided an ideal setting for such an investigation. Besides, the ready availability of a time series dataset in Zambia allowed for a methodology that exploited the advantage of a simultaneous equation model as recently used in the empirical literature on debt and growth. Therefore, operating within the framework of neoclassical growth and investment theory, alongside recent modifications to incorporate the influence of external debt, this study adopted a two-system (output and investment) equation model for its analytical investigation.

4.0 Model Specification, Estimation and Results

4.1 Introduction

This chapter specifies the empirical model used in the study and tests the study hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP). The chapter is organised as follows: the next section specifies the empirical model used in the investigation. Section three highlights the data used and the sources. Section four reports the estimation results. Section five discusses the results. The last section makes a summation.

4.2 Empirical Model Specification

In order to perform an in depth investigation of the debt-investment-growth relationship, it became instructive to disentangle the debt-growth nexus in a two-step relationship, in which the first link is between debt and investment, and the second link is between investment and growth. Therefore, in line with previous studies of external debt and economic growth, the current study adopted a two equation simultaneous model that captures the two-step debt-to-growth relationship. The version of the model adopted in the study is due to Iyoha (1999)[20]. Accordingly, the first equation in the model relates output to factors of production, labour and capital. The second equation relates investment to interest rates, growth of real output, external debt-to-income ratio and debt-service-to-export ratio. Accordingly, the growth model is represented by equation (1):

[20] This approach and methodology is consistent with studies elsewhere. See for instance, Dooley (1986), Krugman (1988), Degefe (1992), Chenery and Strout (1966), Oseghale and Amenikien (1987), Rati Ram (1985), Mjema (1996), Iyoha (1997), Khan and Kumar (1993).

$$\text{LnGDP} = \alpha_0 + \alpha_1 \ln L + \alpha_2 \ln PCGDI_{t-1} + \mu_{1t} \quad (1)$$

Where GDP is gross domestic product, L is the labour force, PCGDI is per capita gross domestic investment (used as a proxy for capital stock), Ln is natural logarithms, t-1 is the lag length, μ_{1t} is the random error term, $\alpha_1>0$ is the elasticity of output with respect to labour, $\alpha_2>0$ is the elasticity of output with respect to investment per head. In line with neoclassical economic theory, it is hypothesised that output positively depends on labour and investment per capita (used as a proxy for capital stock). Notice that per capita gross domestic investment was used instead of gross domestic investment because it was considered a better proxy for the relative share of capital in output[21].

The investment model is represented by equation (2):

$$PCGDI = \beta_0 + \beta_1 r_{t-1} + \beta_2 GDPGR + \beta_3 D/Y_{t-1} + \beta_4 DS/X + \mu_2 \quad \textbf{(2)}$$

Where PCGDI is per capita gross domestic investment, r is interest rates (commercial lending rate), GDPGR is growth rate of real output , D/Y is the ratio of the external debt stock to GNP (which is the usual measure of debt overhang), DS/X is ratio of total debt service payment to export of goods and services, which is expected to capture the "crowding out" effect, t-1 is the lag length, μ_{2t} is the random error term assumed to be Gaussian white noise and β_0 , β_1 , β_2 , β_3, β_4 are parameters of the model. Consistent with assumptions of neoclassical economic theory, per capita gross domestic investment is hypothesised to depend negatively on domestic interest rates, positively on growth in real GDP, negatively on the external debt-income ratio and negatively on the ratio of debt service to exports.

In order to test the hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt-to-export ratios to reduce Gross

[21] In the absence of data on marginal physical product of capital (MPK), most empirical studies have used per capital gross domestic investment. See for instance, Borensztein (1990).

Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP), the output and investment functions were then considered as a system of simultaneous equation as follows:

$$\text{LnGDP} = \alpha_0 + \alpha_1 \ln L + \alpha_2 \ln PCGDI_{t-1} + \mu_{1t} \quad (3)$$

$$PCGDI = \beta_0 + \beta_1 r_{t-1} + \beta_2 GDPGR + \beta_3 D/Y_{t-1} + \beta_4 DS/X + \mu_2 \quad (4)$$

Thus, in this system of equations, there are two endogenous variables, LnGDP and PCGDI. There are six predetermined variables, namely, lnL, lnPCGDIt-1, r_{t-1}, GDPGR, D/Y_{t-1} and DS/X. Using the order condition of identification, it was ascertained that both equations were over-identified. The Two-Stage Least Squares (2SLS) regression method was therefore used to estimate the equations of the model. Given the identification status of the model, econometric theory assures that the resulting estimates of the structural coefficients will be consistent and asymptotically efficient.

4.3 Data and Data Sources

The study used economic time series data for Zambia, over the period 1975-2000.[22] Interest rate data, measured at commercial lending rate were obtained from the Bank of Zambia's annual reports. Labour force data (measured at population aged 12 years and above which was either working or seeking work) and population data were obtained from publications of the Central Statistics Office (CSO). Gross domestic product data (measured at constant prices), gross domestic investment (measured in per capita terms) and external debt data were obtained from the Ministry of Finance and National Planning and the IMF and World Bank's publications and online-based databases.

[22] See appendix for data used in the study

4.4 Estimation and Results

As earlier stated, given the identification status of the model, the study used the two-stage least squares (2SLS) regression method of analysis. The overall significance of each equation of the model was tested as well as of the individual coefficients to determine the validity of the study hypothesis. Preliminary econometric estimation of the simultaneous equation model showed that the output equation exhibited serial correlation. It was therefore re-estimated with the instrumental variable technique using the Cochrane-Orcutt iterative technique for removing first order serial correlation of the error. The final estimates are presented in Tables 4.1 for the output equation and Table 4.2 for the investment equation.

Table 4.1: Output Equation Results: Dependent Variable: Gross Domestic Product

Variable	Coefficient	Std. Error	t-value	t-prob	PartR^2
Constant	25.522	1.1606	21.989	0.0000	0.9603
LNPCGDI	-0.0020215	0.021883	-0.092	0.973	0.0004
LNPCGDI-1	0.046677	0.018678	2.499	0.0213	0.2380
LNL	0.17394	0.081139	2.144	0.445	0.1868

R^2=0.881633, Adjusted R^2=0.858, F (4, 20) = 37.241[0.0000] σ=0.0256972 DW = 1.91
RSS=0.01320694269 for 5 variables and 25 observations. The present sample is: 1976 to 2000.

Table 4.2: Investment Equation Results: Dependent Variable: PCGDI

Variable	Coefficient	Std.Error	t-value	t-prob	PartR^2
Constant	-23215	57814	-0.402	0.6933	0.0100
r	-33419	4.2997	-0.777	0.4484	0.0364
r-1	2.6222	4.6431	0.565	0.5801	0.0195
GDPGR	3.2466	13.061	0.249	0.8069	0.0038
D/Y	-0.17902	0.94919	-0.189	0.8528	0.0022
D/Y-1	-1.1026	0.95265	-1.157	0.2641	0.0773
DS/X	-0.31718	1.3450	-0.236	0.8166	0.0035
Lngdp	860.63	2051.8	0.419	0.6805	0.0109

R^2=0.6611, Adjusted R^2=0.601 F (8, 16) = 3.9014[0.0099] σ=0.201.66 DW = 1.12
RSS=6506670.436 for 9 variables and 25 observations. The present sample is 1976 to 2000.

4.5 Interpretation of Results

Starting with the output equation (3), it can be inferred from the value of R^2 that the two independent variables (labour and per capita gross domestic investment) together explain over 88% of the systematic variations in output during the period under study. The F-value of 37.24 is highly significant, passing the significance test at 1% level. Thus, the hypothesis of a significant linear relationship between the two independent variables is validated. The signs of both coefficients are correct and the t-values of the two independent variables are highly significant, passing the two-tailed test of significance at 1%. The high significance of LnPCGDI-1 suggests the existence of a distributed lag relationship. In other words, investment affects output with a lag.

With respect to the investment equation (4), however, tests for the individual coefficients of the two variables of principle interest, debt-to-income ratio and debt service-to-export ratio, did not pass the significance tests at the conventional 5 or 1 percent levels, except at much lower levels of significance. Thus, the separate influence of a debt overhang effect

and crowding out effect could not be ascertained conclusively in this study. But, it can be inferred from the value of R^2 that the independent variables in this equation together explain over 66% of the systematic variations in per capita gross domestic investment during the period under study. Besides, the F-value of 3.9 passed the significant test at the 1% level, indicating that there is a significant correlation between the independent variables taken together and per capita investment. Thus, the postulation of a significant linear relationship between per capita investment and the five independent variables is validated. All the signs are correct except that of the interest rate. Since the signs of the variables of interest, debt-to-income ratio and debt service-to-export ratio are negative, as postulated; their combined effect is, therefore, to depress the level of investment. Overall, therefore, the results in both equations (3) and (4) offer a confirmation of the study hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP).

In addition, it can be noticed that the elasticity of investment with respect to the debt-to-income variable is -1.10. Thus, a 10% decrease in the debt-to- income ratio results in an 11% increase in investment per capita. This means that a debt reduction of 10% will lead approximately to an 11% increase in investment. Notice that the debt-income ratio affects investment with a lag. The effect of the combination of this lagged response of investment to changes in the debt level and the lagged response of output to changes in investment (arising, among others, from the existence of gestation lags) means that the impact of a reduction in debt stock will not be instantaneous. Rather, it will manifest after a time lag of at least one year. Nevertheless, the effect of a debt reduction on the investment climate and investors' perception will be immediate.

The elasticity of investment with respect to the debt service-to-export variable is –0.317. Thus, a 10% reduction in the debt service-to-export ratio would increase investment by approximately 3%.

4.6 Summation

In summation, the study finds that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP). Therefore, the study hypothesis is largely validated. There is also evidence of a distributed lagged response of investment to changes in the debt-to-income ratio (and of a distributed lagged response of output to changes in investment). From this it can be inferred that reductions in the debt stock will affect investment and output after some lag in time (rather than instantaneously). The next chapter discusses these results and the policy implications that can be drawn from these findings.

5.0 Analysis of Research Findings

5.1. Introduction

In the previous chapter, the hypothesis about the overall negative effect of external debt on investment and economic growth in Zambia was confirmed. However, the existence of a twin channel of influence i.e. the 'crowding out' and 'debt overhang' effects was not validated. It seems therefore that the influence of external debt on investment and growth in Zambia is through a combined effect whereby high debt-to-income ratios and high debt service-to-export ratios altogether combine, leading to reduction in investment and lower growth. This chapter proffers a concrete analysis of these findings and discusses the implications for debt relief. The chapter is organised into four main sections. The second section analyses the research findings. The third section discusses the implications of the study findings for debt reduction. The last section summarises the chapter.

5.2 Analysis of Study Findings

The study's findings support the growing concern that external debt has a depressing effect on investment, and thus growth in Zambia. This finding is also consistent with those of Iyoha (1999) and similar to Sachs (1989). One possible explanation of this finding is that higher debt service repayments during the period 1975 to 2000 implied fewer resources available for public investment since most of the resources were being soaked by debt service obligations. In the words of Presbitero, "the real disincentive to invest was the liquidity constraint that debt service payment imposed on the national budget" (2005:11). Iyoha similarly writes, "external debt service payment impacts the economy through the budgetary process and the country's external account (1999:25). As such, it is likely that the interest payments and principal repayments that made up debt service requirements must have come from the government budget and that these

payments must have been allocated in the external account since debt repayments are made in foreign currency (Were, 2001:28).

Taking this point further, it would seem the case that since there was no commensurate increase in revenues to match the increase in debt service requirements as the country's terms of trade deteriorated, meeting debt service requirements must have implied a contraction in other areas of government spending. Serieux argues that increasing taxes to generate the resources for debt repayment would have been the natural response to a mounting debt repayment burden (1999:14). However, Zambia was faced with a narrow tax base, dominated by indirect (particularly trade) taxes and limited institutional infrastructure and so large across-the-board tax increases were likely to be both institutionally and politically unfeasible, particularly in the face of falling terms of trade and economic stagnation (Turok, 1991:26). In the absence of revenue increases, debt service obligation could only be met by contracting expenditure in other areas. As Turok writes, two areas of government spending that likely suffered the consequences of this decrease in budgetary space were social spending and public investment (1991:27).

Regarding the debt-service induced contraction in social spending; this would be evident from declining human capital expenditures during the period 1975 to 2000. As Kelly reports, "between 1975 and 1980, the (un-weighted) average per capita expenditure on education in Zambia grew at 3.4% annually, but in the 1980-90 period fell by 2.4% annually"(1991:35). Even more distressing, Kelly's evidence suggests that the decline in human capital expenditure was most acute at the lower levels of the education system (1991:36). The situation for health expenditures was similarly on the downgrade. For instance, Lake *et al* (2000:19) observe that between 1980 and 1992, real per capita allocation to the government health budget declined from US $ 18.8 in 1980 to US$ 5.1 and that the trend was not reversed to the 1980 level throughout the 1990s(2000:19).

How then could this have resulted in lower economic growth? Simply this, the long-term effects of per capita decreases in social spending cannot be underestimated. Micro studies continue to bring that relationship into sharper focus. Schultz and Tansel (1993) showed

that the health status was a strong determinant of adult wage earning capacity (and, by implication, productivity) in Ghana and Cote-d'Ivoire. Husbands et al (1996) showed that primary schooling had a significant and positive effect on the productivity of resources in agriculture in Kenya. In effect, therefore, the restrictions imposed on budgetary allocation by external debt service obligations in Zambia acted to depress investments in both human and physical capital, ultimately resulting in poor economic growth.

Incidentally, debt servicing would also have had implications on the external account. Looked at this way, it seems the case that the allocation of budgetary resources was but the first requirement in debt servicing. Resources must have been allocated in the external account since all debt repayments were, and continue, to be made in foreign currency. For countries blessed with substantial foreign reserves this transaction would have had no measurable economic impact. However, for a country like Zambia with limited reserves, the required foreign currency must have been recommended out of the foreign exchange earnings from exports (Mwanza, 1992:14).

Whether the foreign exchange demand imposed by debt service requirement was passed on through the price mechanism (exchange rate depreciation) or through non-price rationing (import restrictions), the effect would likely have been similar. During times when the country had a flexible exchange rate the currency would depreciate as the demand for foreign exchange exceeded the supply (Mwanza, 1992:14). In alternate times, when the country maintained a fixed exchange rate, it chose to devalue the currency, which had the same effect. While depreciation or devaluation of the currency can, potentially, ease the foreign exchange constraint somewhat by inducing an increase in export, the experience of Zambia which, exports only a limited number of primary goods has shown that the exports' response was neither quick nor substantial, and was often wiped out by negative terms of trade movements (Fundanga, 2000:8). In any case, currency depreciations likely exacerbated the budgetary choices by increasing the domestic cost of debt service obligations. The net result was thus an increase in the price of imported intermediate inputs and capital goods, without a commensurate increase in the capacity to import, and the consequent contraction in aggregate supply and gross

domestic investment. A reduction in gross domestic investment, therefore, depressed economic growth – as earlier validated.

Besides, when Zambia attempted to maintain a fixed exchange rate in these circumstances it was forced to accommodate the increased demand for foreign exchange through restrictions on imports (Mwanza, 1992:17). The likely outcome was a reduction in the supply of imported intermediate inputs and capital goods, with similar consequences for aggregate supply and gross domestic investment. In addition, the non - price restrictions created an added incentive for rent seeking activity, which in turn likely had an additional negative effect on investment and Gross Domestic Product.

From the foregoing discussion, it seems the case that Zambia experienced serious difficulties in managing the servicing of the high stock of external debt[23]. Although the literature on debt hardly explains why most indebted countries, especially in Sub-Saharan Africa (SSA), have not been able to use the borrowed funds to generate sufficient increase in output, those critical of foreign aid in general have maintained that it does more harm than good. This study's finding supports this position. Besides, it would seem the case that capital-intensive projects that might have been financed from external debt in Zambia possibly caused harm to growth by a combination of savings displacement and an increase in the incremental-output ratio as a result of their lower productivity.[24]

Another level of explanation that can be proffered in respect of how external debt would have acted to lower investment and thus depress growth relates to the fact that a heavy debt burden might have potentially generated a negative savings and investment effect. In this regard, domestic savers and investors might have seen a high stock of debt as an indicator of the high future tax rates that would be needed to meet debt service obligations. Consequently, this might have acted to lower the expected returns on savings and investment. In the words of Claessens, "returns from investing in the domestic

[23] Claessens et al (1996) similarly concluded about most countries in Sub-Saharan Africa.
[24] For a detailed analysis on how capital-intensive projects financed from debt resulted in lower productivity, see Were (2001) and White and Lensink (1999).

economy were effectively 'taxed' away by existing foreign creditors and investment by domestic and new foreign investors was discouraged"(Claessens et al., 1996:17).

In the case of Zambia, therefore, the heavy debt burden might have acted through domestic savers and investors who might have seen a high stock of debt as an indicator of the high future tax rates that would be needed to meet debt service requirements. This discouragement might have acted to lower the expected return on savings and investment. Domestic economic agents might thus have chosen to invest their savings elsewhere, leading to capital flight. Foreign investors, in addition to being similarly discouraged by the prospect of future taxes, might have been discouraged by the prospect of future currency depreciations that would lower the foreign exchange value of their investment. Alternatively, they might have been concerned about their ability to repatriate profits in the face of non-price rationing of foreign currency. Ultimately, this likely reduced gross domestic investment and lowered economic growth.

Some analysts have argued, however, that the lower level of public investment (and indeed savings) in Zambia, going back to 1975, is an indicator of more fundamental structural problems in the economy rather than due to external debt and debt servicing (see for instance IMF, 1989). To the contrary, the findings in this study indicate that one needs more than structure to explain the absence of significant growth in gross domestic investment over the period 1975 to 2000. Though structural problems were contributing factors, it is hard to argue that the size of the debt and the ever increasing repayment burden were not equally, if not more, important. As such the preoccupation with structural adjustment, in our view, misses the target. It is therefore not surprising that Zambia which had since 1978 been a predominant user of IMF's emergency financing facilities (Standby Arrangement and Extended Fund Facilities) and the World Bank's structural adjustment programmes did not seen any significant turn around in investment growth nor economic performance during the period 1975-2000. The failure of investment to respond to these programmes suggests that the fundamental problem – one of a debt burden – was not being satisfactorily addressed. The contention is that private

agents could not foresee a change in investment conditions as long as the fundamental source of present and future instability – an unsustainable debt load – remained.

Arguably, Zambia was essentially being asked to adjust to an unattainable equilibrium, one that included carrying a debt burden. Thus, the most fundamental shortcoming of adjustment over the past two decades can be characterised as been the failure to recognize (until recently) that Zambia's debt has been unsustainable since the early 1980s and should have be substantially reduced.

5.3 Implications for Debt Reduction

This study's findings and the ensuing analysis would no doubt point to the urgent need for debt reduction that would push the existing debt below the level at which it distorts macroeconomic policy and rather produces the right incentives for investment. Admittedly, there seems to be no simple answer to determining that level because i) the actual size of the effect of debt on investment and growth is difficult to measure in any precise manner because it requires an estimation of future potential based on current information; and, ii) the appropriate definition of what constitutes a debt "burden" must be related to the objective of the original debt flows and current debt relief[25].

If creditors simply wish to obtain the best rate of return on capital, the intent would be to maximize the net present value of the debt that is repaid relative to the present value of outlays (including new debt flows). If, on the other hand, the intent is to promote growth in the debtor country, then more generous debt relief may be necessary to allow sufficient breathing space to unleash the growth potential thwarted by the debt repayment burden and other disincentive effects of debt. However, given that the debt relief through the HIPC initiative is expressly aimed at poverty reduction (or, more broadly, human development), even more generous terms are required. More directly, Krugman's (1998) definition of the debt 'burden' as simply that part of the debt that cannot conceivably be

[25] This is a potential area for future research since it is beyond the scope the current study.

repaid will not suffice. Instead, a stricter definition that considers the debt burden to be that part of the debt that compromise the potential for poverty reduction and growth is more appropriate in the context of the HIPC initiative.

Within the limitation of this study, and taking economic growth as the relevant framework, three benchmarks can be used to provide a basis for determining a minimum level of debt relief for Zambia. These are: i) the current level of debt repayment; ii) the discount rate on private debt and, iii) a model based estimation of the level of the maximum non-distortional debt burden. Each of these is motivated in the next few sections to provide a 'rule of the thumb' for responding adequately to the burden of debt.

With regard to the current level of debt repayment, a simple computation reveals that Zambia was only able to meet (on average) about 40% of her scheduled debt service payments in the period 1975 to 2000. This occurred even as Zambia received significant amounts of concessional resource flows and underwent various levels of structural adjustment. Thus, there is a clear argument to be made this represent (at the very least) the upper limit of the net debt outflows that Zambia can bear. A lower bound interpretation of this can, therefore, be: "that part of the debt that requires debt service payments above current levels." Roughly, taking current levels to be 40% of scheduled payments and assuming a one-to-one relationship between debt service level and the debt stock (and ignoring the timeline of the debt), this would constitute 60% of the current stock of debt.

However, when it is recognized that even that level of debt servicing was achieved at the cost of reduced levels of investment and growth, debt reduction would have to be significantly more than 60% of the current stock of debt if debt relief dividends that can promote investment and economic growth (including poverty reduction) are to be obtained. To put it differently, post-relief debt service payments would have to be significantly lower than actual (rather than scheduled) levels of debt servicing if debt reduction is to provide the necessary budgetary space for stimulating investment, and thus economic growth.

With respect to the discount rate on private debt, it is the case, as seen in chapter two of the study, that although the proportion of the total debt owed by Zambia that was private commercial bank debt has always been relatively small, Zambia carried some commercial bank debts at relatively high interest rates. However, given that the International Development Association (IDA) Debt Reduction Facility has in the past been used to help countries like Zambia deal with that portion of their debt stock by providing funds that allowed them to buy back much of that debt on the secondary market (the Brady Plan style), one can argue that the price of these countries' debt on the secondary market is the markets' "rational" assessment of the proportion of the debt the country would have reasonably been expected to repay."

In other words, the implied discount on the secondary market indicates the part of the debt that the private market, unhindered by humanitarian considerations, treats as a debt overhang and is willing to forgive. Public debt should, therefore, be willing at least to come close to the discount rate of the private market. According to Serieux (1999:42), the average value of the private debt of the HIPC countries (that has used the IDA Debt Reduction Facility) on the secondary market was 15 cents on the dollar. This represents a discount, or level of debt forgiveness, of 85%. Thus, if public entities were subject to the discipline of the secondary markets as commercial banks are, they would have to contemplate a level of forgiveness of at least 85%.

Turning to the model-based estimation of the level of the maximum non-distortional debt burden, a significant body of work in applied economics has attempted to discern the effects of a country's relative debt stock (or debt service obligations) on its rate of growth. This study has equally endeavoured to do so. Some of these studies, however, have tried to estimate the ratio of external debt to GDP that is growth maximizing (i.e. the debt-GDP ratio that is consistent with the maximum level of economic growth). For instance, Smyth and Hsing (1994) and Eisner (1992) estimated that optimal debt-GDP ratio for the United States of America (USA) ranges from 38.4% to 47.1%. Relating this to Zambia, which has a much weaker economy than the USA, it would seem to follow

that her debt carrying capacity is much lower than that of the United States. However, the significant level of concessionality can, to some degree, compensate for the difference. Using the above result as a benchmark, one can, therefore, suggest that to be growth maximizing – and therefore potentially poverty decreasing – Zambia's external debt should not exceed 40% of GDP. Given an estimated average debt-GDP ratio of 143% for Zambia between 1975 and 2000, it would require an average forgiveness rate of approximately 72% of her debt to achieve this.

While the above estimates for desired debt relief levels are hypothetical, they are at least based on some basic economic criteria. What is common to all these estimates is that they propose a level of debt forgiveness that is almost certain to exceed what is offered by even the HIPC initiative for Zambia. To compare, the HIPC initiative proposes to forgive 60% of Zambia's total external debt stock at the completion point (IMF, 1999). This level of debt reduction would not meet any of the criteria mentioned above and would fail to provide any debt forgiveness dividend (on average). As such, doubt can still be cast about the ability of the HIPC debt relief initiative to solve Zambia's immense debt problem.

5.4 Summation

In summation, the chapter provided a concrete analysis of the study finding that external debt and debt service payments act to depress investment and thus limit economic growth in Zambia. Building the analysis along this line, the chapter linked the heavy debt burden of Zambia to the failures to invest in both physical and human investment – thus jeopardising both present and future economic growth. The principle policy implication teased out of the analysis of research findings was that of adequate debt relief. Adequate debt relief was broadly defined as a debt reduction that pushes the debt below the level at which it distorts macroeconomic policy and crowds out necessary investment, and a debt reduction framework that produces the right incentives for both government and private sector. Three basic criteria for determining the minimum level of debt relief for Zambia

was proffered deriving from: the current level of debt repayment; the discount rate of private debt and a model based estimation of the level of the maximum non-distortional debt burden.

6 Summary, Conclusions and Recommendations

6.1 Introduction

This chapter summarises the findings of the study and the conclusions that are drawn from them. The issues that arise from the findings and conclusions of the study that have implications for policy formulation and implementation are examined. A summary of the findings is presented in the second section while conclusions of the study are presented in the third section. Issues that have policy implications are discussed in the fourth section as recommendations.

6.2 Summary of Findings

In chapter one, the study was introduced with the statement of the problem and the motivation for a country focussed context. The objectives and rationale guiding the study in terms of how external debt and debt service payments influence investment and economic growth were highlighted. The study was premised on the hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and high debt service-to-export ratios to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP). This informed the choice of a two-step approach enabling the use of a simultaneous equation model to assess the impact of external debt and debt service payments on economic growth in Zambia.

Chapter two provided background information and context for understanding the links between the role and influence of external debt in Zambia's economic growth performance during the period 1975 to 2000. From this examination, it was established that the economic development path of Zambia and major policy thrusts between 1975 and 2000 were interrelated with the role and influence of external debt and debt service

obligations. The chapter also examined the structure and composition of Zambia's external debt and within this context it was found that public guaranteed debt dominated the structure of Zambia's debt during the period under study, thereby limiting the options available for debt relief. Further, it was established that the composition of Zambia's debt was mainly multilateral, bilateral and private. Generally, it was demonstrated that Zambia's external debt exerted great pressure on the economy in the period 1975 to 2000 and that this led to a chequered economic growth path.

Chapter three reviewed the economic models and theories that guided the study. Specifically, the study reviewed neoclassical growth models of growth and investment. The strength and weaknesses of existing empirical evidence were explored and the choice of the model used in the study was justified. The study also established that recent studies are combining the neoclassical output and investment functions into a system of equations, comprising an output and investment equation, in order to make explicit allowance for the interaction between external debt, investment and growth. On this basis, the model specification due to Iyoha (1999) was adopted to aid the investigation.

In chapter four, the empirical model specification and results of the study were presented. The overall significance of each equation of the model was then tested as well as the individual coefficients to determine the validity of the study hypothesis. On this basis, the study found that Zambia's external debt and debt service payments reduce investment and thus depress the economy. The channels through which this happens was however not confirmed as both the partial coefficients of the 'debt overhang' and 'crowding out' variables were not found to be statistically significant at the conventional 5 or 1 percent levels. Rather, the study findings suggested that high debt-to-income ratios combine with high debt service-to-export ratios, leading to a negative effect on investment and thus, lowered economic growth in Zambia. Therefore, the study hypothesis that Zambia's external debt acts through the combined effects of high debt-to-income ratios and a high debt-to-export ratio to reduce Gross Domestic Investment (GDI), and thus depress Gross Domestic Product (GDP) was validated. There was also evidence of a distributed lagged response of output to changes in the debt-income ratio and of a distributed lagged

response of output to changes in investment. From this it was inferred that reductions in the debt stock would affect investment and output after some lag in time rather than instantaneously.

Chapter five proffered an analysis of the study findings and discussed the implications for debt relief. It was established that external debt impacted the national economy through two principle avenues: through debt service payments that soaked budgetary resources, and through decreased returns on investment that acted to discourage domestic savers and investors alike.

Furthermore, it was established that although the literature on debt hardly explains why most indebted countries have not been able to use the borrowed funds to generate sufficient increase in output, the case of Zambia demonstrated that external debt in general did more harm than good. The assumption that external debt is good for investment and economic growth was therefore not found to be applicable to Zambia. The study also dismissed the argument that lower levels of public investment in Zambia, going back to 1975, was an indicator of more fundamental structural problems in the economy rather than due to external debt and debt servicing. To the contrary, the findings in the study indicate that one needs more than structure to explain the absence of a significant growth in gross domestic investment. As such, the study maintained that the failure of investment to respond to externally inspired programmes, for instance, the structural adjustment episodes of the last two decades, suggests that the fundamental problem - one of a depressive debt burden - was not being satisfactorily addressed.

The need for adequate debt reduction that would push the existing debt below the level at which it distorts macroeconomic policy and rather produces the right incentives for investment was also established. In addition, it was shown that the existing debt relief measures whereby 60 percent of Zambia's external debt would be cancelled under the terms of the HIPC initiative still left troubling questions about future prospects for economic growth since debt relief at 60 percent of Zambia's total debt stock would not

push Zambia's debt beyond a level at which it does not distort economic growth performance.

6.3 Conclusions of the Study

In terms of major conclusions, results obtained in the study confirm that an excessively high stock of external debt depress investment and lowers the rate of economic growth, contrary to what was being argued by international financial institutions and the group of creditor countries that external debt does not distort macroeconomic performance. Thus, consistent with the call by national and global movements, Zambia, and indeed other heavily indebted countries need to articulate creative strategies for bringing about debt reduction and even outright debt cancellation so that the high stock of debt and the associated crushing debt service burden would not have such a negative impact on economic growth. The study also concludes that traditional debt relief mechanisms used by Zambia, including debt restructuring, debt rescheduling, reduced debt service, debt buy back, interest rate options, and various debt conversion schemes like the debt-equity swaps were ineffective in significantly reducing the debt stock, at best limited.

The only hope now lies in the current HIPC debt initiative, which is expected to relieve the HIPCs of their debt burdens, with positive implications for poverty. However, the HIPC initiative may not be the panacea in view of its inadequacy to provide significant debt reduction. The results obtained in this study support the need for Zambia to be considered for total debt cancellation beyond what the HIPC initiative offers.

However, determining the level of external debt that is growth maximising would require additional checks using different models and estimators that could provide more accurate estimates. This was beyond the scope of the study and remains an area for future research. On a more optimistic note, however, the results obtained in the study enables a general conclusion that Zambia still has a chance of overcoming her external debt problems by cultivating the right policies and, through accelerated debt reduction support.

6.4 Recommendations of the study

The foregoing discussion, therefore, bears implications for policies and intervention programmes. The study was not strictly policy oriented, however, so there is a limit to what can be done in terms of policy analysis and recommendations. The following are therefore recommendations on policy issues that arise from the study.

6.4.1 There is Need for Adequate Debt Relief

First, the study findings suggest that poor economic outcomes in Zambia are caused, at least in part, by the large scale of debt, which hangs over the national economy, coupled with debt service payments that effectively act as a tax on growth in Zambia. Therefore, reducing the debt stock and thus debt service obligations will make Zambia better off. It will also enhance the prospects for growth and, other things being equal, improve the payment prospect of creditors. But, any level of debt reduction though necessary will not be sufficient. Sufficiency will require debt reduction that pushes the debt below the level at which it distorts macroeconomic policy and 'crowd out' necessary social spending, and a debt reduction framework that produces the right incentives for the government and private actors.

As indicated earlier, past attempts to resolve Zambia's external debt crisis have not borne much fruit. The hope now lies in the HIPC debt relief initiative, which is expected to relieve the HIPCs of their debt burden, with positive implication on poverty. In view of this, the results obtained in the study support the need for Zambia to be considered for comprehensive debt relief measures. Within this context, this study recommends that such debt relief must meet at least three criteria: adequacy, additional funding and, constructive arrangement for monitoring post debt relief progress.

In terms of Adequacy, this study established that it is not that any amount of debt reduction will have a significant positive effect. If debt reduction is not sufficient, there

may be no net benefit to it (in terms of poverty reduction or otherwise). A smaller debt burden can have precisely the same effect as a larger burden in terms of reducing the budgetary space for governments, producing a foreign exchange crunch, and providing a disincentive for investment and reform. Therefore, the recommendation is that poverty focused debt relief must be sufficient to remove the debt burden.

With regard to additional financing for both debt relief and poverty reduction, the study maintains that the HIPC facility is not likely to provide a substantial dividend for use in poverty reduction. In any case, the remaining debt burden may still be large enough to impair growth. The study therefore recommends that new instruments and procedures should be used to improve both these conditions. Exchanging debt for spending on poverty can be used to simultaneously help reduce the debt load (or at least cover service obligations). Payments can be made to a special fund or escrow account denominated in foreign currency that can be drawn on by the Zambian government for debt service payments in return for spending prescribed amounts in domestic currency (perhaps above some benchmark level) on health, education, or other area of poverty related spending, or contributing to a Poverty Fund such as that used in Uganda.

However, it is important that this funding is additional to other initiatives such as the HIPC initiative because the net effect would be minimal if it served simply as part of the debt reduction exercise. Another advantage is that, if it replaces a pre-existing commitment (i.e. debt was previously being serviced) the problems of overload and limited absorption noted by Foster et al (1999) are not likely to be relevant. Such funding (again only if it is additional to removal of the debt overhang) can be a legitimate and fruitful use of Overseas Development Assistance (ODA) if poverty action plans are indeed acted upon. Part of the advantage is that such funding is directed through the government budget in a manner that much of ODA is not. In the particular case of poverty, legislative power, coverage, and continuity in the delivery of services and management and the provision of public goods is undeniable.

On the constructive arrangement for monitoring and funding poverty reduction, the recommendation is that the conditionality attached to debt reduction must be conducive to constructive and coherent policies, and to general ownership of these policies by the Zambian government and indeed other debtor country governments and peoples. In that regard it is necessary that adjustment programmes avoid the problems of conditionality overload, narrowing of the policy space due to ideology rigidity, and the excessive dependence on negative conditionality for which the Enhanced Structural Adjustment Facility (ESAF) developed as a reputation, deserved or otherwise.

Admittedly, the framework proposed by the World Bank (1999) does go some way in that direction by proposing a participatory process within the Comprehensive Development Framework (CDF) and along the lines of the third-party approach. While this approach is useful as a broad framework, it may be unwieldy with respect to short-term assessment of country performance. This can however be achieved through a country rating system (not unlike the credit worthiness criteria) managed by one or both of the Bretton Woods institutions or a United Nations (UN) agency. Through such a system, countries' efforts and effectiveness at poverty reduction and general economic policy can be rated based on agreed scale and criteria (focused on management-related issues such as transparency, accountability, efficiency in the use of funds, etc., rather than on the level of achievement).

Potential donors could use this rating system to determine the level and nature of contributions to a country's poverty reduction strategy, thus avoiding the stop-start process of current adjustment-related funding. Such a rating system could also act as a means of utilizing positive conditionality – countries' eligibility for certain types of funding assistance, etc. can be related to their rating.

6.4.2 There is Need for a Debt Management Mechanism

Further, the study acknowledges that debt cancellation in the absence of an appropriate mechanism to avoid slipping into further debt would be pointless. In this regard, the study recommends a debt management mechanism whereby Zambian authorities must establish

a national body for external debt management made up of senior officials from various disciplines, such as financial or investment analysts, development economists, legal experts and banking specialists. Its specific task should be defining the purpose for the loans sought, recommending how much to borrow, and where to borrow from; assessing total loan commitments in relation to repayment capacity and debt service issues; and ensuring a strong and positive link between debt relief resources and poverty reduction programmes.

6.4.3 There is Need for a Long-Term Strategy on External Debt

The results obtained in the study further support the need for Zambia to adopt an appropriate long-term strategy on external debt, which should incorporate debt management in the country's long-term development strategy. The contention is that external debt should be linked to proper project selection, implementation, monitoring and evaluation. In keeping with the long-term strategy, a debt management strategy should also seek to maintain a prudent debt structure and continue to increase the transparency and predictability of debt issuance. Within this context, the study recommends that necessary steps to update a number of the statutes that governs debt contraction be updated in order that the debt contraction process can, for instance, be subjected to parliamentary scrutiny.

6.4.4 There is Need for More Vigorous Domestic Resource Mobilisation

A final recommendation is that alongside efforts at debt relief and debt management, Zambia must adopt a new and more vigorous domestic resource mobilisation policy and programme specifically geared towards the improvement of the domestic investment ratio in order to reduce dependence on external debt for financing major investment projects.

As established in the study, the experience of Zambia since 1975 has shown the limitations of foreign sources of development finance. The results of this study suggests that the conceptual thrust and underpinning behind structural adjustment episodes of the 1980s and 90s, in a global environment where power relations between Zambia and the

developed countries are highly unequal, was unrealistic and naïve. Access to markets for Zambia's goods remains limited due to trade and market access barriers. Besides, as established in the study, adjustment programmes took place within the context of a debt burden. Thus, the context itself made real adjustment impossible due to the harsh realities of the external debt effect. But, the danger posed by the conditionality of some of the forms of finance from the IMF and the World Bank cannot be ignored. The study, therefore, recommends that Zambia should intensify efforts and rely more on domestic mobilization of resources to finance investment projects. To do that successful, it needs to identify the underlying causes behind the poor performance in terms of mobilizing local resources. Priority, however, should be to rely more on domestic resources to finance investment and economic development.

6.5 Future Challenge

In the final analysis, however, this study acknowledges that a permanent solution to the external debt problem lies in the establishment of a just and equitable international economic order. That alone can guarantee the developing world, other things being equal, better market access, stabilisation of exchange rates and interest rates, access to financial and capital markets, adequate flows of financial resources and better access to the technology of the developed countries – and thus sustainable domestic investment and economic growth.

Bibliography

Aron, J. and Elbadawi, I. A. (1992): "Parallel Markets, the Foreign Exchange Auction, and Exchange Rate Unification in Zambia", Policy Research Working Papers WPS 909, The World Bank, Washington D.C.

Avramovic. D., et al. (1964): Economic Growth and External Debt, Johns Hopkins University Press, Baltimore.

Bank of Zambia (1989): Annual Report 1989, Lusaka.

Bank of Zambia (1992): Annual Report 1992, Lusaka.

Bank of Zambia (1995): Annual Report 1995, Lusaka.

Bank of Zambia (1997): Annual Report 1997, Lusaka.

Bank of Zambia (1999): Annual Report 1999, Lusaka.

Bartlett, S. (1989): "The Third World Debt Crisis Reshapes American Banks", New York Times, 24 September 1989.

Bello, M. (1996) 'Women Organising Under the Structural Adjustment programme', in A Chhachhi and R.Pittin (eds) Confronting State, Capital and Patriarchy: Women Organising in the Process of Industrialisation. London: Macmillan Press Limited.

Beverly, W. (1990): "Women's Health in Developing Countries," in Helen Wakllace and Kanti Giri ed., Health Care of Women and Children in the Developing World, Third Party Publishing Co., Oakland, CA., p. 170.

Bird, G. (1989): IMF Lending to Developing Countries: Issues and Evidence, Rout ledge, New York.

Bird, G. (1995): IMF Lending to Developing Countries: Issues and Evidence, Routledge, London and New York.

Bird, R. (1990): Taxation and Economic Development, University Press, Baltimore and

London.

Borenstein, E. (1990): Debt Overhang, Debt Reduction and Investment. The Case of the Philippines, International Monetary Fund Working Paper No.WP/90/77, September.

Borensztein, E. (1991): Will Debt Reduction Increase Investment? Finance and Development, Vol. 28, No. 1, March.

Botchwey, K., ed., (1998): Report on the Group of Independent Persons Appointed to Conduct an Evaluation of Certain Aspects of the Enhanced Structural Adjustment Facility, International Monetary Fund, Washington DC.

Bowa, M. and J. Dean (1997): Has the Market the Sovereign the Debt Crisis? University Press, Princeton.

Calvo. G. (1989): "A Delicate Equilibrium: Debt Relief And Default Penalties In An International Context." In Frenkel, J.a., M.F. Dooley and P. Wickham, eds, Analytical Issues in Debt, International Monetary Fund, Washington, D.C.

Carciofi, R. and C. Oscar (1994): "Tax Reforms and Equity in Latin America: A Review of the 1980s and Proposals for the 1990s,"Innocenti Occasional Papers, Economic Policy Series, No. 39, UNICEF.

Chenery, H.B. and Strout, A.M. (1966): Foreign Assistance and Economic Growth, American Review, 56:4 September.

Cheryl, P. (1974): The Debt Trap: The International Monetary Fund and the Third World, Monthly Review Press, New York, and p.33

Chibber, A. and Pahwa, S. (1994): 'Investment Recovery and Growth in Nigeria: The Case for Debt Relief' in Onah, F.E., ed., African Debt Burden and Economic Development, Selected Papers for the 1994 Annual Conference of Nigerian Economic Society, May.

Chiwele, C. (1997): The Zambian Labour Markets Under Economic Adjustment, Study Fund, and Lusaka.

Chowdhurry, K.A. (1994): Structural Analysis of External Debt and Economic Growth: Some Evidence from Selected Countries in Asia and the pacific" Applied Economics, Vol. 26.

Claessens, S. (1990): The Debt Laffer Curve: Some Empirical Estimates, World Development, December.

Cline, W. (1988): "International Debt: Progress And Strategy" Finance and Development, 25, no.2.

Cohen, D. (1993): "Low Investment and large LDC Debt in the 1980s," America Economic Review, Vol. 83, 437-49.

Cohen, D. (1990): Slow Growth And Large LDC Debt In The Eighties: An Empirical Analysis, CEPREMAP working paper no.9002, November.

Corbo, V. and P. Rojas (1992): "World Bank-Supported Adjustment Programmes: Country Performance and Effectiveness, " in Corbo, Fisher and Webb (eds.), Adjustment Lending Revisited: Policies to Restore Growth, World Bank, *Washington* D.C.

Degefe, B. (1992): Growth And Foreign Debt: The Ethiopian Experience: 1964 – 86, AERC Research paper No. 13, Nairobi: AERC.

Development Assistant Committee (1996), Shaping the 21st Century: The Contribution of Development Co-operation, DA/OECD, Paris.

Deshpande, A. (1995): " The Debt Overhang and the Disincentive to Invest," Journal of Development Economics, Vol. 52, pp. 169 – 187.

Domar, D. E. (1946): 'Capital Expansion, rate of growth, and Employment', Econometrical, April 137-147.

Dooley, M.P. (1986): "An Analysis Of The Debt Crisis." International Monetary Fund Working Paper WF/8614.

Drouin, M.P (1986): An Analysis Of The Debt Crisis, IMF working paper WF/86/14.

Ebel, B. (1991): "Patterns of Government Expenditure in Developing Countries During The 1980s: The Impact on Social Service", *Innocenti* Occasional Papers, Economic Policy Series No. 18, UNICEF.

Elbadawi, I. (1992): "Have World Bank-Supported Adjustment Programmes Improved Economic Performance in Sub-Sahara Africa?" World Bank Working Series 1001. World Bank.

Elbadawi, I., Ndulu, B.J and N.S. Ndungu (1997a): 'Debt overhang and Economic Growth in Sub-Sahara Africa', in Z. Iqbal and R. Kanbur External finance for low-income Countries, IMF institute, International Monetary Fund, Washington.

Elbadawi, I and N. Ndung'u (2000): External Indebtedness, Growth And Investment In Conflict And Post-Conflict African Countries, Princeton, NJ.

Eisner, R. (1992): "Deficits: Which, How Much, and So What?" American Economic Review, May 1991.

Enzo R. G and M. C Yang (1988): "Primary Commodity Prices, Manufactured Goods Prices, and the Terms of Trade of Developing Countries: What the Long Run Shows, The World Bank Economic Review, Vol 2, No. 1, p.34.

Evans, M and T. Greenaway, ed. (1991): Developing Countries And The International Economy: Issues In Trade, Adjustment And Debt, Frank Cass. London.

Feinberg, R.E. (1987): Report Of The International Committee On Debt And Finance, Mimeo, Washington. D.C, pp.6-7.

Ferraro, V and M. Rosser (1994): "Global Debt and Third World Development", in Klare, M. And D. Thomas Ed. World Security: Challenges For A New Century, St. Martin Press, New York.

Fishlow, A, (1985): "Lessons from the Past: Capital Markets during the 19th century and the Interwar Period," International Organization, Vol. 39, No. 3 (Summer 1985), pp. 383-440.

Foster, M., J. Healey, M. Martin and H. White (1999): Linking HIPC II Debt Relief with Poverty Reduction and Wider Aid Issues: Some Reflection and Suggestions Mimeo

Froot. K. (1989): "Buybacks, Exit Bonds, And The Optimality Of Debt And Liquidity Relief". International Economic Review, vol. 30: 49-70, February.

Fry, M. J. (1989): "Foreign Debt Instability: An Analysis Of National Saving And Domestic Investment Responses To Foreign Debt Accumulation In 28 Countries", Journal of International Money and Finance, Vol. 8, 315-344.

Fundanga, C. (2000): 'The Role of the IMF and World Bank in Zambia.' ADP Economic Research Papers No. 35.

Giovanni, A.C. (1994): " Macroeconomic Policy, Poverty Alleviation And Long-Term Development: Latin America In 1990s, Innocenti Occasional Papers, Economic Policy Series Number 40. UNICEF

Goncalves. F. (1996): "Entangled in the adjustment web", Southern Africa Political Economic Monthly. Vol. 9, No. 12, September.

Greene, J.E., and M.S. Khan (1990): "The African Debt Crisis". African Economic Research Consortium, Special Paper 3, Nairobi: Initiatives Publishers.

Hardy, C. (1996): "The case for Multilateral Debt Relief for Severely Indebted Countries," International Monetary and Financial Issues for the 1990s Vol. VII, United Nations, New York.

Helleniner, G. (1998): Global Economic Governance, Global Negotiations and the Developing Countries, Background Paper for the Human Development Report 1999 Mimeo.

International Labour Organisation (1996): World Employment 1996, Geneva

International Monetary Fund (1989), IMF Survey Supplement on the Fund, International Monetary Fund, Washington DC.

International Monetary Fund (1992): World Economic Outlook, International Monetary Fund, Washington, Tables A46 and A48, pp. 157 and 162-163.

International Monetary Fund (1997): The ESAF At Ten Years: Economic Adjustment And Reform In Low Income Countries, International Monetary Fund, Washington, DC.

International Monetary Fund (1999): Annual Report, International Monetary Fund, Washington, p.17.

International Monetary Fund (1999): "Debt Relief for Low-Income Countries: The HIPC Initiative," IMF pamphlet Series-*No. 51*, International Monetary Fund, Washington DC.

Iyoha, M.A. and S.O. Iyare (1994): "Africa's Debt Problems". In Onah, F.E., ed., African Debt Burden and Economic Development, Selected papers for the 1994 Annual Conference of the Nigerian Economic Society, May.

Iyoha, M.A. (1997a): An econometric study of debt overhang, debt reduction, investment and economic growth in Nigeria, NCEMA Monograph No. 8 Ibadan: NCEMA, 1997.

Iyoha, M.A. (1997b): "Policy Simulations With A Model Of External Debt And Economic Growth In Sub-Saharan African Countries", Nigeria Economic and Financial Review, Vol. 2, No.2, 1997.

Iyoha, M.A (1999) External Debt And Economic Growth In Sub-Saharan Countries: An Econometric Study, AERC research paper 90, Nairobi: AERC.

Johnson, J. H. and S.W. Sulaiman (1993): "Borrower Ownership of Adjustment Programs and the Political Economy of Reform" World Bank Discussion Paper 1999, The World Bank, Washington DC.

Jorgenson, Dale W. (1963): 'Capital Theory and Investment Behavior'. American Economic Review, Papers and Proceedings 53: 247-59.

Jorgenson, Dale W. (1967): 'The Theory of Investment Behavior. In Determinants of Investment Behavior' ed., Robert Ferber, Universities-National Bureau Conference Series No.19. New York, Columbia University Press.

Kapinjimpanga, O. (1996): "SAPs And Debt", Southern Africa Political And Economic Monthly, Vol. 9 no. 12, September.

Kandiyoti, D. (1988) 'Bargaining with Patriarchy', Gender and Society 2(3): 274-90

Kelly, M. J. (1991): Education in a Declining Economy: The Case of Zambia, 1975 – 1985, EDI developing policy case series. Analytical Case Study no. 8, The World Bank, Washington D.C.

Kelly, M. J. (1998): Primary Education In A Heavily Indebted Poor Country: The Case Of Zambia In The 1990s, Oxfam and UNICEF, Lusaka.

Kelly, M. J. (1999): The Impact Of IMF Programmes On Social Sector Budgets In Zambia, With Special Reference To Education, A report for Oxfam, University of Zambia, Lusaka.

Khan, M. S. (1990): "The Macroeconomic Effects of Fund-Supported Adjustment Programs," IMF Staff papers, Vol. 37, No. 2, June 1990.

Klein, T. (1987): 'Debt Relief For African Countries'. Finance and Development. December.

Khan, M.S., and M. Kumar (1993): "Public And Private Investment And The Convergence Of Per Capital Incomes In Development Countries." IMF Working Paper WP 193/51, June.

Killick, T. and M. Martin (1989): "African Debt: The Search For Solutions", UN Africa Recovery Programme, Briefing Paper, No. 1, June.

Killick, T. (1995): IMF Programmes in Developing Countries: *Design and Impact*, Routledge. London.

Klare, M.T. and D.C Thomas (1994): World Security: Challenges for a New Century, St. Martin Press, New York.

Krugman, P. (1988): "Financing Vs Forgiving A Debt Overhang: Some Analytical Notes", Journal Of Development Economics, Vol. 29, November.

Krugman, P. (1998): Currencies and Crisis, The MIT Press. Cambridge, Massachusetts

Lensink, R. and H. White. (1999). "Is there an Aid Laffer Curve?" Credit Research Paper No 99/6. Nottingham: Centre for Research in Economic Development and International Trade, University of Nottingham

Looney, R.E. (1987): "Determinants Of Third World Mineral Oil Economies' External Debt". Journal of Economic Development, vol. 12, no. 2.

Manuelli, A.(1994): "Tax Reform and Equity in Asia: The experience of the 1980s," Innocenti Occasional Paper, Economic Policy Series, No. 42, UNICEF.

Masiye, F. and W. Wake (2005): 'An Analysis of Spatial Aspects of Development in Zambia' a Research paper for DFID: UK

Ministry of Finance and National Planning (1998): Debt Sustainability Analysis Report, Unpublished.

Mutiso, C.M. (1991): Determinants of External Debt in Kenya. A dissertation paper for the degree of Master of Arts in Economics: University of Makerere

Musona, D., O.K. Mungule and V. Seshamani (1999): 'Debt', Overcoming Barriers to Zambia's Development: Dismantling the Tripod of Deprivation, Debt and Disease, edited by Seshamani, V., Lusaka, GRZ/UNICEF, pp. 28 – 45.

Moonilal, R. (1998): The Changing Landscape of Labour Relations: New Domains for Trade Unions: A Case Study of Trinidad and Tobago. Phd Thesis, ISS, The Hague

Moss, T and S.Chiang. (2003) ' The Other Cost of High Debt in Poor Countries: Growth, Policy Dynamics, and Institutions' Issue Paper on Debt Sustainability, Centre for Global Development, Washington DC, August 2003.

Mwanza, A. (1992): The Structural Adjustment Programme in Zambia, SAPES Books, Harare.

Mjema, G.D. (1966): "The Impact Of Foreign Debt And Debt Servicing In The Economy Of Tanzania: A Simultaneous Equation Approach." African Journal of Economic Policy, vol. 3, no. 1, June.

Ogbe, N.E. (1992): "Evaluation Of Nigeria's Debt-Relief Experience (1985-1990). "Technical Papers No. 55, Organisation for Economic Co-operation and Development, Paris.

Onah. F.E. (1994): "External Debt And Economic Growth". In Onah, F.E., ed., African Debt Burden and Economic Development, Selected papers for the 1994 Annual Conference of the Nigerian Economic Society, May.

Oseghale, B.D. and F.E. Amenihiemen. (1987): "Foreign Debt, Oil Exports, Direct Foreign Investment And Economic Performance In Nigeria (1960-1984). "Nigerian Journal of Economic and Social Studies.

Partillo, C. et al., (2002): 'External Debt and Growth', IMF Working paper, No 02/69.

Peter, H. L and P. J. Morton,(1989): "How Sovereign Debt Has Worked," in Developing Country Debt and the World Economy, edited by Jeffrey D. Sachs, pp. 225-237.

Ram, R. (1985): "Export And Economic Growth: Some Additional Evidence." Economic Development and Cultural Change, Jan.

Reimers, F. (1990): "The Impact of the Debt Crisis on Education in Latin America: Implications for Education Planning," Prospects, Vol. XX, No. 4, 539-554.

Republic of Zambia (1982): Economic Report, Ministry of Finance and National Planning, Lusaka.

Republic of Zambia (1990): Economic Report, Ministry of Finance and National Planning, Lusaka.

Republic of Zambia (1997): Living Conditions Monitoring Survey Report, CSO, Lusaka.

Republic of Zambia (1999): Selected Socio-Economic Indicators, CSO, Lusaka.

Republic of Zambia (1999): Economic Report, Ministry of Finance and National Planning, Lusaka.

Republic of Zambia (2000): Economic Report, Ministry of Finance and National Planning, Lusaka.

Rivero, C. C., Ascencio R.L and J.Q Vinagre (1991): "The Impact of Economic Crisis And Adjustment on Health Care in Mexico," Innocenti Occasional Papers, Number 13, Fiscal Policy and the Poor, UNICEF.

Sachs, J. (1980): "A Strategy For Efficient Debt Reduction". Journal of Economic Perspectives, vol. No. 1, pp. 19-29. Winter.

Sachs, J. (1988). "The Debt Overhang Of Developing Countries", In Debt, Stabilization And Development: Essays In Memory Of Carlos Diaz Alejandro, Basil Blackwell, Oxford.

Sachs, J. (1989). "The Debt Overhang Of Developing Countries", In Calvo, G., R. Findlay, P. Kouri and J. Macedo, eds., Debt, Stabilization and Development., Basil Balckwell, Cambridge, MA.

Sally, L *et al.*, (2000): Analysing the process of Health Financing Reform South Africa and Zambia: Zambia Country Report. Major Applied Research 1, Technical Paper No. 2, Partnership for Health Reform Project, Abt Associates Inc. Bethesda.

Savvides, A. (1992): "Investment slowdown in developing countries during the 1980s: Debt Overhang or foreign capital inflows?" Kyklos, Vol. 45, pp. 363-378.

Serieux, J.E (1999): Reducing the Debt of the Poorest: Challenges and Opportunities, the north-south Institute, Hague.

Sevigny, D. (1990): The Paris Club: An Inside View, The North-South Institute Ottawa.

Schultz, T.P. and Tansel (1993): "Measurement of Returns to Adult Health: Morbidity Effects on Wage Rates in Cote- d'Ivoire and Ghana," LSMS Working Paper No. 95,The World Bank: Washington DC.

Schultz, T. P. (1998): "The Formation of Human Capital and the Economic Development of Africa: Returns to Health Care in Mexico," Economic Research Papers, No, 37, African Development Bank.

Seshamani, V. (1997): Economic Policy Reforms, Economic Growth and Sustainable Human Development: A Comparative Study of India and Zambia, Institute of Developing Economies, Tokyo.

Seshamani, V. (1999): 'Macroeconomic Policies of the 1999 Budget as it relates to Economic Development', paper presented at a Workshop on The 1999 Economics Association of Zambia Budget Analysis, Lusaka, 4th February.

Seshamani, V. ed. (1999): Overcoming Barriers to Zambia's Development: Dismantling the Tripod of Deprivation, Debt and Diseases, GRZ/UNICEF Programme of Cooperation 1997- 2001 Mid-term Review Study, Lusaka.

Smyth, D.J. (1995): "In Search of an Optimal Debt Ratio for Economic Growth," Contemporary Economic Policy, Vol. XII, October 1995.

Solow, R.M, (1957): "Technical Change and the Aggregate Production Function." Review of Economics and Statistics

Solow, R. (1956): ' a contribution to the theory of Economic growth', Quarterly Journal of Economics, 65-94.

Summers, L. H. and V. Thomas (1993): "Recent Lessons of Development," The World Bank Research Observer, Vol.8, No. 2 (July).

Stephen, H. (1985): "The Politics of Adjustment: Lessons from the IMF's Extended Fund Facility," International Organisation, Vol. 39, No. 3 (Summer 1985), p. 506,

Tim, C. (1988): The Debt Trap: The Dangers of High Real Interest Rates for the World Economy Basil Blackwell, Oxford: pp.109-110.

Turok, B. *ed.* (1991): Debt and Democracy: Alternative Stratergies for Africa. Vol. 13, Institute for African Alternatives, London.

United Nations Conference on Trade and Development (1988): Trade and Development Report, UNCTAD/FDR/8, New York, and p.101.

United Nations Conference on Trade and Development, UNCTAD, (1988): Trade and Development Report, UNCTAD/TDR/8, New York, pp. 92-93.

United Nations Conference on Trade and Development (1988): Trade and Development Report, United Nations, New York.

Warner, A.M. (1992): "Did The Debt Crisis Cause The Investment Crisis?" Quarterly Journal of Economics, vol. CVII No 4, November.

Were, M. (2001): The impact of external debt on economic growth and private investment in Kenya: An empirical Assessment. A paper presented at the Wider Development Conference on Debt relief, 17-18 August 2002, Helsinki

William, R. C. (1983): 'International Debt and the stability of the World Economy', Policy Analyses in International Economics, No.4, pp. 31- 55

Williamson, J. (1996): 'Constraints on Macroeconomic Management imposed by heavy external Debt' A paper presented to IMF/World bank seminar in December.

World Bank (1989): World Development Report, Washington: The World Bank, Table 24, P. 211.

World Bank (1999): Heavily Indebted Poor Countries (HIPC) Initiative-Strengthening The Link between Debt Relief and Poverty Reduction, (mimeograph), The World Bank Washington DC.

World Bank (1999): Global Development Finance Country Tables, Washington D.C.

World Bank (2000): Global Development Finance Country Tables, Washington D.C.

Appendix A: GDP (1994 Prices, Kwacha) and GDP Growth Rate Dataset

YEAR	GDP	GDPGR
1975	2,061,586,800,000	-2.27
1976	2,056,943,000,000	6.22
1977	1,939,719,600,000	-456
1978	1,998,007,772,727	0.55
1979	1,924,356,000,000	-3.02
1980	1,994,403,600,000	3.03
1981	2,127,183,187,500	6.17
1982	2,065,182,617,647	-2.81
1983	2,041,470,900,000	1.97
1984	2,006,300,625,000	0.34
1985	2,031,091,279,412	1.61
1986	2,063,250,000,000	0.72
1987	2,110,776,786,885	2.67
1988	2,246,384,000,000	6.28
1989	2,222,038,837,113	-1.02
1990	2,213,549,30,000	-0.48
1991	2,212,454,073,690	-0.04
1992	2,174,411,258,796	-1.75
1993	2,322,135,018,051	6.82
1994	2,240,700,000,000	-8.62
1995	2,184,800,000,000	-4.33
1996	2,328,800,000,000	6.44
1997	2,405,600,000,000	3.50
1998	2,360,400,000,000	-1.90
1999	2,408,500,000,000	2.40
2000	2,492,100,000,000	3.50

Source: CSO (various issues)

Appendix B: Labour Force and Population Dataset

YEAR	Labour	Population
1975	1,476,000.00	4,841,000.00
1976	1,526,000.00	5,002,480.00
1977	1,586,000.00	5,177,360.00
1978	1,641,000.00	5,361,950.00
1979	1,698,000.00	5,550,120.00
1980	1,751,400.00	5,738,000.00
1981	1,824,200.00	5,926,790.00
1982	1,880,400.00	6,117,120.00
1983	1,962,300.00	6,309,060.00
1984	2,032,000.00	6,503,080.00
1985	2,100,000.00	6,700,000.00
1986	2,201,000.00	6,901,040.00
1987	2,300,000.00	7,107,800.00
1988	3,063,696.00	7,322,250.00
1989	3,158,804.00	7,546,740.00
1990	3,256,864.00	7,784,000.00
1991	3,349,620.00	8,022,380.00
1992	3,345,018.00	8,261,540.00
1993	3,543,133.00	8,501,110.00
1994	3,644,042.00	8,740,720.00
1995	3,747,826.00	8,980,000.00
1996	3,854,565.00	9,214,890.00
1997	3,964,344.00	9,500,000.00
1998	4,411,000.00	9,800,000.00
1999	4,635,000.00	9,900,000.00
2000	4,700,000.00	10,200,000.00

Source: CS0 Zambia (various issues).

Appendix C: External Debt To GNP (D/Y) And Total Debt Service To Export Of Goods And Services (DS/X) Dataset

YEAR	D/Y	DS/X
1975	68.95	9.11
1976	71.26	19.24
1977	93.07	16.07
1978	91.93	26.58
1979	90.84	31.28
1980	83.96	53.00
1981	90.33	25.29
1982	95.27	35.99
1983	113.90	32.03
1984	139.90	27.14
1985	203.14	25.27
1986	344.99	14.38
1987	293.50	51.04
1988	184.04	18.56
1989	168.45	15.53
1990	220.90	13.62
1991	293.50	15.08
1992	184.04	51.09
1993	168.45	29.28
1994	220.89	34.68
1995	217.23	31.42
1996	219.04	186.29
1997	192.00	28.53
1998	252.00	17.40
1999	227.00	16.20
2000	287.00	18.30

Source: World Debt Tables (2000), Global Development Finance (2000)

Appendix D: Commercial Bank Lending Rates Dataset

YEAR	Interest(r)
1975	7.50
1976	8.13
1977	8.25
1978	8.25
1979	9.08
1980	9.50
1981	9.50
1982	13.00
1983	14.54
1984	18.60
1985	27.40
1986	21.40
1987	21.20
1988	18.39
1989	18.39
1990	40.00
1991	46.00
1992	53.00
1993	56.90
1994	80.70
1995	36.20
1996	47.70
1997	57.40
1998	49.30
1999	37.20
2000	40.40

Source: Bank of Zambia Annual Reports (various issues)

Appendix E: GROSS Domestic Investment (1994 Kwacha Prices) And Per Capita Gross Domestic Investment Dataset

YEAR	GDI	PCGDI
1975	11,925,198,119	2,463.37
1976	6,385,736,127	1,276.51
1977	5,743,411,714	1,109.33
1978	5,565,248,739	1,037.92
1979	3,126,056,947	563.24
1980	5,146,800,171	896.97
1981	4,577,147,499	772.28
1982	3,503,481,146	572.73
1983	2,760,353,997	437.52
1984	2,836,542,112	436.18
1985	3,061,590,081	456.95
1986	4,516,197,007	654.42
1987	2,741,600,000	385.72
1988	2,871,705,857	392.19
1989	2,680,649,508	355.21
1990	3,011,188,713	386.84
1991	1,680,827,020	209.52
1992	2,401,683,796	290.71
1993	3,442,530,654	404.95
1994	2,659,551,261	304.27
1995	2,510,691,407	279.59
1996	2,792,001,368	302.99
1997	2,916,246,601	306.97
1998	4,089,000,000	417.24
1999	4,390,000,000	443.43
2000	3,508,000,000	343.92

Source: World Development Report (2001)