

**FOREIGN DIRECT INVESTMENT
AND ITS IMPACT ON ECONOMIC GROWTH AND GROSS
DOMESTIC SAVINGS – THE CASE OF ZAMBIA, 1970 TO 2000.**

**BY
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DISSERTATION

**Submitted to the University of Zambia in partial fulfilment of
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MASTER OF ARTS IN ECONOMICS.

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2004



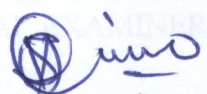
Declaration

I FELIX SIMEO do hereby declare that this dissertation is entirely the outcome of my own work and that to the best of my knowledge it has never been presented for a degree at this or any other University. All figures and tables, except for those whose sources have been acknowledged, are original.

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Dedication

To my late father, my living mother and my children, Mulenga, Chileshe, and Mukuka.

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- Lastly, I thank my family, especially my nephew Kelvin and my children respectively, for availing me the resources that enabled me to cope with the rigorous research activities, and for putting up with my absence from home during my studies.

Acronyms

AIDS	- Acquired Immune Deficiency Syndrome
BIT	- Bilateral Investment Treaty
BOP	- Balance of Payments
BOZ	- Bank of Zambia
CSO	- Central Statistics Office
DRC	- Democratic Republic of Congo
EBZ	- Export Board of Zambia
ECM	- Error Correction Model
ECT	- Error Correction Term
FCI	- Foreign Capital Inflow
FDI	- Foreign Direct Investment
FNDP	- First National Development Plan
FPI	- Foreign Portfolio Investment
GDP	- Gross Domestic Products
GDS	- Gross Domestic Savings
GRZ	- Government of the Republic of Zambia
HDR	- Human Development Report
HIV	- Human Immuno Deficiency Virus
IFC	- International Finance Corporation
IMF	- International Monetary Fund
INESOR	- Institute of Economic and Social Research

LuSE	- Lusaka Stock Exchange
MIGA	- Multilateral Investment Guarantee Agency
MNC	- Multi-National Corporation
MOFED	- <i>Ministry of Finance and Economic Development</i>
NERP	- New Economic Recovery Programme
OECD	- Organisation for Economic Corporation and Development.
OLS	- Ordinary Least Squares
PCGIVE	- Personal Computer Generalised Instrumental Variables Estimators
R&D	- Research and Development
SAP	- Structural Adjustment Programme
SNDP	- Second National Development Plan
SSA	- Sub-Sahara Africa
TNDP	-Third National Development Plan
UNCTAD	- United Nations Conference on Trade and Development
ZIC	- Zambia Investment Centre
ZPA	- Zambia Privatisation Agency
ZRA	- Zambia Revenue Authority

Operational definitions

1. Foreign Direct Investment (FDI) - In this study a guiding criterion in defining FDI is that it is investment made to acquire a lasting interest and an effective voice in the management of a local enterprise by foreign residents, who according to the IMF should own 10 percent or more of the equity of the enterprise. Besides the movement of capital, FDI involves international movement of technology, managerial and organizational skills.

It is noteworthy that in this study the core focus is inward FDI. That is the inflow of FDI to a recipient (host) country or economy.

2. Gross Domestic Product (GDP) is the money value of all final goods and services newly produced for sale within a country's borders during a given year.

The key terms in defining GDP are:

- Newly produced (excludes existing goods eg used cars, used homes)
- Final (excludes intermediate goods)
- In a given year (measures the flow of production)

Also excluded are illegal activities (eg drugs) and financial transactions (stocks and bonds).

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Abstract

Zambia has for a long time experienced declining economic growth despite having inherited very generous reserves at independence in 1964. To reverse this trend she has tried, though inconsistently and often piecemeal to implement liberalization policies aimed at attracting Foreign Direct Investment (FDI) that is conceived as desirable to stimulate domestic savings and economic growth. There is, however, a dearth of empirical studies on the extent to which FDI has contributed to economic growth and gross domestic savings in Zambia. Thus this study proposes to evaluate this by applying a country-specific approach, while embracing the views of both the conventional and the radical schools of thought. Using a dataset assembled from secondary sources and refined using interviews with officials from both public and private organisations the study employs ordinary least squares estimation procedure to examine the impact of FDI on economic growth and gross domestic savings in Zambia, and specifically applies an error correction model procedure to abstract the short- and long-run information in the modelling process. The results of the study show that FDI has had a positive, but minimal impact on both economic growth and gross domestic savings in Zambia. Thus, from a policy perspective, FDI may not be an unconditional panacea for Zambia's declining economic trends unless considerations are given to the preconditions for ensuring its successful use.

Key Words: *Foreign direct investment, Economic growth, Gross domestic savings,*

Ordinary least squares, Cointegration, Error correction model.

CHAPTER 1

INTRODUCTION

1.1 Background

With the experience of the global debt of the 1980s, most developing countries, including Zambia have in the recent years, realized the danger of debt finance. In addition, most foreign banks and other international lending institutions have reduced their exposure in countries faced with debt crises. As a result bank and trade-related lending have declined in relative importance (See table 1.1).

To bridge their resource gaps most developing economies seem to rely on Foreign Direct Investment (FDI), which seems to be soaring and is promising to remain their dominant source of external finance for the most foreseeable future. Studies consulted allude to the fact that in the past few decades, the growth rates of world FDI exceeded both the growth rates of world trade and GDP. UNCTAD (2001: p9) for instance informs us that, "By all measures (assets, sales, trade and employment of foreign affiliates), FDI rose more rapidly in 1999 and 2000 than such other aggregates as gross domestic products (GDP), domestic investments, licensing payments and trade".

Thus, the attraction of FDI is becoming increasingly important for developing countries. This is reflected by and large in the trend over the last several years as national governments have strived to improve their investment climates, with a view to attract more FDI. Most countries have for instance eased restrictions on FDI and aggressively offer tax incentives, import duty exemptions and other forms of subsidies. Among others, Aitken and Harrison (1999: p605) and Morrisset and Pirnia (2000: p13) find support for this view. However this is often based on the implicit assumption that greater inflows of FDI will bring certain benefits to the country's economy.

Table 1.1: Net Long-term Resource flows to Developing Countries (Selected years)
(billions of dollars)

	1985	1991	1995	1998	1999	2000
Total	73.4	123	261.2	334.9	264.5	295.8
Official Flows	40.7	60.9	55.1	54.6	45.3	38.6
Private Flows	21.8	62.1	206.1	280.3	219.2	257.2
Capital Markets		26.3	99.1	103.5	33.8	79.2
Debt Flows		18.8	63	87.9	-0.06	31.3
Equity Flows		7.6	36.1	15.6	34.5	47.9
FDI	11.0	35.7	107	176.8	185.4	178

Source: World Bank (2001)

The perceived financial advantage of this form of international finance is that it is non-volatile. For instance, FDI inflows can be less affected by changes in national exchange rates as compared to other private sources of finance, such as portfolio investments and loans. This is partly because currency devaluation means a drop in the relative cost of production and assets (capital, goods and services) for foreign companies and thereby increases the relative attraction of a 'host' country. In addition, unlike foreign loans, FDI

does not attract interest payments or amortization. An outflow of funds (remittances of profits) would only be expected when the economy is performing well. Thus, Balance of Payments (BOP) crises due to financial obligations are less likely. Besides the movement of capital, FDI involves international movement of technology, managerial and organizational skills.

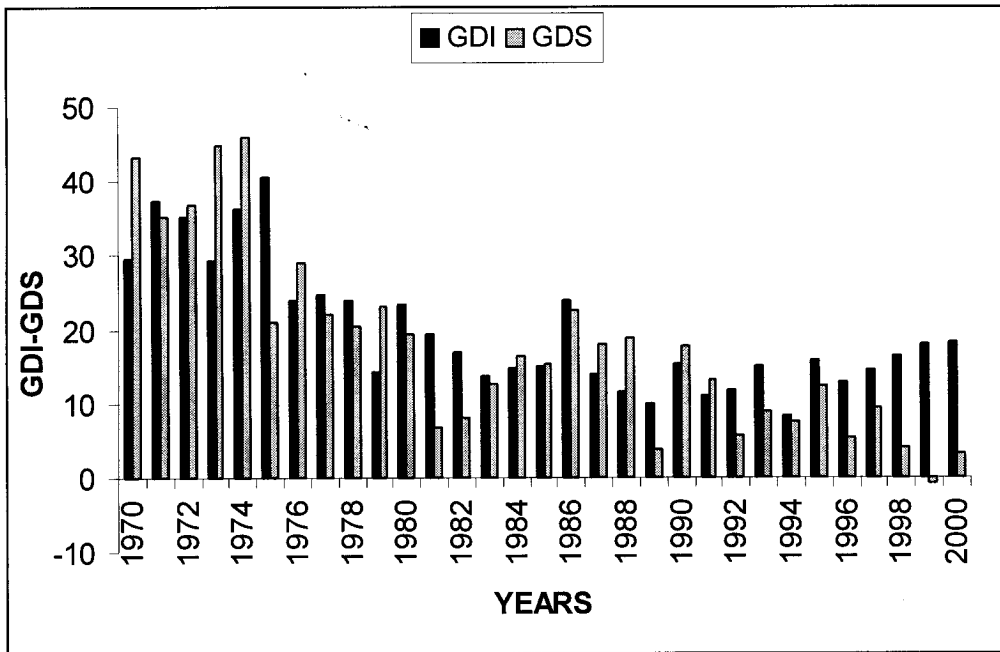
However, the effects of FDI on the recipient countries may not be as rosy as these summary statements suggest. FDI may bring about, adverse BOP impact if the dividend and royalty repatriation exceed inflow of capital; loss of tax revenue through the use of transfer pricing to reduce declared profits; impaired development of local firms through direct competition, abuse of market power, and political influence; and loss of economic sovereignty through dependence on the actions of foreign investors. FDI can also result in negative spillovers. For instance, it may force domestic enterprises to close down due to lack of the necessary financing for upgrading their technology. Moreover, it is possible that benefits to the rest of the economy may not occur at all if there are institutional obstacles or deficiencies in the absorptive capacity of the domestic enterprises.

1.2 The Problem

Despite having inherited very generous reserves from the British at independence in 1964, Zambia, just like the rest of the developing world had been hit by a debt crisis of the 1980s. Her economy has since then been characterized by a growing foreign debt-burden, BOP difficulties, and a lack of resources to fund new investments, resulting in increasing unemployment and declining per capita incomes.

A number of studies observe that the availability of credit is one of the most important determinants of the investment rate in developing countries (see Blinder and Stiglitz, 1983). On the contrary, as acknowledged in the Poverty Reduction Strategy Paper (PRSP, 2002) Zambia has over the years experienced a growing saving-investment gap with gross domestic investment generally outweighing gross domestic savings (see figure 1.1).

Figure 1.1: Gross Domestic Investment (GDI) and Gross Domestic Savings (GDS), both as proportions of Gross Domestic Products (GDP), 1970-2000, (Percent).

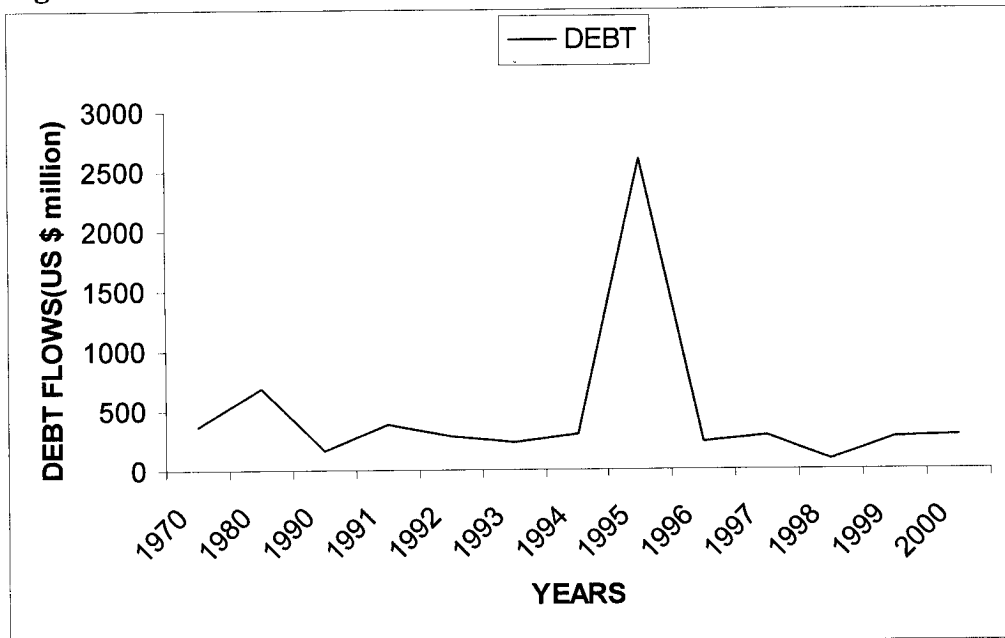


Source: Own, using World Bank (1994/1995, 2002a) data.

This is understandably so, because domestic savings have over the years been very low. The financial sector in Zambia has over the years remained widely underdeveloped and in most cases repressed, as evidenced among other things, by the fixed interest rates for most part of the post-independence era. Thus, the capacity of the financial sector to harness domestic financial resources to fund desirable investment has been inadequate.

Therefore, to finance growth Zambia has for a long time been using external debt, whose flow has in the recent years not only declined (see figure 1.2) but has also become uncertain, as evidenced by the conditionality attached to them. For instance, as can be seen from figure 1.2 below, external debt flow to Zambia declined in nominal terms to US \$84 million in 1998 from US \$2606 million in 1995 (see also appendix 20).

Figure 1.2: Trend of total debt flow to Zambia, 1970-2000



Source: Own¹.

However, in 1999 and 2000 debt flow to Zambia rose to US \$264million and US \$287million respectively. As shown in figure 1.2, debt flow to Zambia has not only declined in the recent years but has over time been inconsistent. It is noteworthy that when a country suffers a resource gap (an internal macroeconomic imbalance between national expenditure and national savings), it would also confront a foreign exchange gap

¹ The graph was made using World Bank (1999c, 2000, 2002d) data.

that has to be balanced with an inflow of foreign capital. In macroeconomic terms, when government expenditure plus private investment exceed government revenue and private savings (a resource gap), this internal imbalance would spill over into current account deficit and hence foreign exchange gap.

Thus, to close the resource gap Zambia still requires international financial intermediation in the form of loans from the international lending institutions, or by private foreign investment. Since the former source of external finance is uncertain and has been on the decline, it is conventionally wise for Zambia to aim at attracting more non-debt creating capital flows. Such inflows mainly consist of FDI that has considerable potential for growth especially when accompanied by appropriate domestic macroeconomic policies, and as stated by Peng² in a nutshell, “FDI is usually considered the best component of foreign investment”.

This euphoria however, has been a source of controversy amongst researchers and policy makers, and thus requires to be supported by empirical evidence. This study aims to provide such empirical evidence in response to the growing concern of the government to find alternative sources of finance for growth. In this respect the government of Zambia has in fact acknowledged the positive role of foreign investment in augmenting savings and promoting growth. According to GRZ (2002: p19), “national savings that are so strategic to overall growth have fallen over the years to levels that are inadequate to fund

² Extracted from the Human Development Report (HDR), 1999/2000, p 125.

desirable investment. If Zambia were to depend entirely on its savings, investment would be low, resulting in a slow rate of capital formation, income generation, and employment creation. The country thus, needs to attract credible investment so as to augment its savings. Foreign investment, when carefully selected, can also assist to open doors in the export markets and transfer skills and technology.”

1.3 Objectives of the study

1.3.1 Overall objectives

- (1) To review the structure and pattern of FDI in Zambia and to carry out an empirical assessment of its macroeconomic impact, using data for the period 1970 to 2000. The evaluation will take into account the effects of FDI as viewed by both the orthodox theory and the critical school of thought.

1.3.2 Specific objectives

- (1) To evaluate the impact of FDI on economic growth.
- (2) To evaluate the impact of FDI on gross domestic savings.

1.4 Hypotheses

- (1) The inflow of FDI into Zambia has had a negative impact on real economic Growth.
- (2) FDI has had depressing effects on gross domestic savings in Zambia.

1.5 Rationale

This study can be justified on various grounds. First and foremost, there is a dearth of empirical studies, on FDI in Zambia, despite realizing that Zambia's resource gap requires international financial intermediation. While this paper is not an attempt to resolve any policy issues surrounding FDI, it is a contribution to these seemingly in-exhaustive debates, and will certainly be among the few that have looked at FDI in Zambia, especially as it relates to issues of economic growth and gross domestic savings, which are on the decline. Secondly, the findings of the study will be useful to government planners and policy makers, in that they will provide evidence and thus create awareness on whether or not FDI should be viewed as a panacea for the declining economic trends in Zambia. Thirdly, it is also expected that the findings of this study will motivate further studies into the phenomenon.

The choice of the sample period was influenced by the following factors:

- 1970 was preferred as the starting point because of the difficulties encountered in collecting data on FDI in Zambia, especially for the period between 1964-1970. All the sources consulted had data on the inflow of FDI into Zambia starting from 1970.
- The decision to make the year 2000 as the terminal point was based on considerations of the availability of data. This was to avoid provisional and preliminary estimates on data.

The importance of undertaking this study lie in the fact that after the experience of massive disinvestments in 1970 Zambia, though not consistently, has in the last three

decades enjoyed impressive trends in the inflow of FDI³, though often overwhelmed by government policies, and macroeconomic situation. This is especially so in the last decade when the government of the day vigorously accelerated the implementation of the IMF/World Bank supported Structural Adjustment Programme (SAP) that was partly aimed at attracting foreign investment. Therefore, rather than focusing on theoretical approaches, descriptions of trends, studies on the determinants of FDI, and descriptive studies in which government incentives and disincentives are discussed, it is critical that a quantitative analysis of the macroeconomic effects of FDI inflow to Zambia is carried out. It is against this background that this study was carried out.

1.6 Organization of the dissertation

This dissertation consists of seven additional chapters. Chapter two gives an overview of the political and economic background of Zambia. Chapter three reviews the trends in FDI in the global context, while chapter four discusses FDI trends in Zambia and gives an overview of the structure and pattern of FDI in Zambia and its institutional and regulatory framework. Chapter five deals with literature review. In this chapter, literature relating to this study was reviewed in order to find out the amount of work done on FDI and to see whether there are any gaps or if the current subject has been covered. This enabled the researcher to gain more insight on the subject with particular attention to the impact of FDI on economic growth and on gross domestic savings. Chapter six gives information on the methods of collecting and analyzing data used in this study. Major results of this

³ See appendix 3.

study are presented and discussed in chapter seven. Finally, conclusions and recommendations are presented in chapter eight.

CHAPTER 2

OVERVIEW OF ZAMBIA'S POLITICAL AND ECONOMIC BACKGROUND

2.1 Overview of Zambia's political background

Zambia is a landlocked, Central African country with an area of 752,614 square kilometres. It is bordered to the north by the Democratic Republic of Congo (DRC) and Tanzania, to the east by Malawi, to the south by Mozambique, Zimbabwe, Botswana, and Namibia; and to the west by Angola. These borders were drawn by the British between 1890 and 1911. Before that time the country was divided into areas ruled by independent chiefs. Thus, in 1911 the British, through the British South Africa Company (BSA Co.) created Northern Rhodesia, which eventually became a British Protectorate in 1924. In 1953 a federation was formed between Northern Rhodesia (Zambia), Southern Rhodesia (Zimbabwe), and Nyasaland (Malawi). But with the spread of African nationalism into Northern Rhodesia advocating end of British rule, the federation was eventually dissolved in 1963, thereafter paving the way for the independence of Zambia on the 24th October, 1964.

At independence Kenneth Kaunda, under the United National Independence Party (UNIP) was sworn in as Zambia's first republican president, a position he held for the next 27 years. He managed to rule this long by outlawing all political parties in 1972. Thereafter Zambia became a one-party state until 1990 when, as evidenced by the food riots and a coup attempt, the people of Zambia staged violent protests against the sudden untraditional price hikes of basic foodstuffs, such as maize meal, which resulted in the skyrocketing of the cost of living. Consequently, Kaunda was pressured by the vast majority of Zambians to amend the constitution, thereby legalizing opposition parties, and bringing forward the general elections, by two years to 1991.

The social upheavals alluded to in the above paragraph could be linked largely to the severe conditions under which aid was granted to Zambia when Kaunda sought assistance from the IMF in the mid 1980s. For instance, while the home grown Third National Development Plan (TNDP) which was in force at the time, focused on the diversification of the economy towards agriculture amidst declining reserves, the IMF emphasized on economic policy reforms, which included the removal of food subsidies and decontrol of prices.

In the 1991 presidential election Fredrick Jacob Titus Chiluba under the Movement for Multi-party Democracy (MMD), defeated Kaunda and was sworn in as the second republican president, a position he held for a constitutional two consecutive five-year terms. Chiluba tried to restore macroeconomic stability and as will be seen later in this chapter, he changed the orientation of the economy from state owned enterprises and

direct government intervention towards more reliance on the market. However, he did not equally have an easy reign in spite of having begun by wooing the IMF and the World Bank, through the acceleration of the pace of implementation of the Structural Adjustment Programme (SAP) that did not really help improve the country's economic position.

Chiluba's reign witnessed several industrial unrests, protests, and a coup attempt in 1997. Towards the end of Chiluba's second term, some of his party members agitated for the amendment of the constitution, in order to allow him to run for the third term. This bid was shot down as it received an extremely hostile response from the general populace as well as from some senior members of MMD who were ultimately dismissed from the party. The 2001 general elections were heavily contested, and as evidenced by the election petitions, the results were very controversial⁴. However, at the end of it all, Levy Patrick Mwanawasa under MMD emerged winner in a 'first past the post' system receiving only 29% of the total votes cast and was sworn in as the third republican president.

2.2 Overview of Zambia's economic background

At independence Zambia was considered to be one of the most prosperous countries in the Sub-Sahara Africa (SSA), having inherited very generous foreign reserves from the British. In addition, Zambia is endowed with a lot of unexploited natural resources in the form of water, forests, land and mineral wealth, to mention just a few. Besides, she has

⁴ At time of writing this dissertation the courts had not concluded the presidential as well as a number of parliamentary election petitions.

not experienced the internal strife that has plagued some of her neighbours like Angola, and the Democratic Republic of Congo (DRC). Surprisingly today, despite this great prosperity potential that Zambia holds the economic situation has been reversed. With nominal GNP per capita falling from US \$630 in 1980 to US \$450 in 1990 and US \$300 in 2000 (World Bank, 2002c:p1), Zambia is today considered to be one of the most severely indebted and poorest countries in the world.

In a nutshell, the root causes of Zambia's poor economic performance are traceable to complex factors relating to economic, social, and political mismanagement, compounded by external factors. Firstly and most fundamentally, the failure of her relatively mono-economy and some of her government policies, compounded by corruption over most part of the post-independence period have had the most telling effects on Zambia's economic stagnation. For instance, Zambia's mono-economy heavily depended on copper, over whose international price she had little control, if any. Her reserves began to diminish when the price of copper fell in the 1970s and never stabilised thereafter. This external factor coupled with Kaunda's closed one party state-led policies which comprised, among other things, nationalization of major firms (particularly in the mining and leading sectors), price controls and enlargement of the civil service, was exacerbated by the rise in the international price of oil in 1973/74 and the world interest rates.

Zambia's mono economy was introduced and left behind by the British who wanted to rule Northern Rhodesia because they needed raw materials for their factories in Britain. By 1924 copper mining had been established mostly on the Copperbelt province and the

Africans were made to supply cheap labour. Thereafter, all the country's opportunities and constraints evolved around the copper revenue position of the country. For instance, before experiencing the effects of the first drastic decline in the price of copper in 1970s the Zambian economy showed great potential for economic growth, with an average growth rate of 4.2% between 1970 and 1974. During this period the UNIP government was able to invest in the parastatal companies that included the giant mining company, all of which later constituted a serious fiscal drain on government reserves, due to the inefficient manner in which they were run.

Consequently, mining, the driving force in the Zambian economy declined for a long time, pulling down other sectors that heavily depended on it. During this period Kaunda, had already made costly social commitments to the people of Zambia in terms of the provision of free education, free medical services and other forms of subsidies. So, to meet these obligations amidst diminishing reserves and unsustainable macroeconomic instability, Zambia's conventional wisdom was to borrow from both domestic and international lending agencies.

Thus, the mining industry has undeniably been the main engine that has powered the Zambian economy since independence, so much that for a long time the factors that led to the decline in the mining industry also impacted negatively on most macroeconomic variables that include among others, inflation and balance of payments (BOP) deficits. For instance, except for 1990 Zambia operated negative overall BOP deficits from 1980 to 1998 at an average level of -US \$170 million. With the decline in the country's

reserves these deficits were for a long time financed from external reserves. As a result, Zambia in the long run accrued an unsustainable debt stock of US \$6.3 billion in the year 2000, which is about 159% of that year's GDP⁵ (see appendix 1).

Secondly, Zambia had since the last decade, experienced adverse variations in the weather conditions. Drought conditions had been the order of most rain seasons, leading to poor yields in most rain-fed crops, which includes the main food crop, maize. The net effect of this weather pattern was a severe depletion in the country's food reserves, leading to constant cries for food relief in many parts of the country. In response to this, the government of Zambia had to import food, using her already strained meagre resources.

In trying to sustain and to revitalize her economy, Zambia though inconsistently and often piecemeal has tried to apply a number of economic policies and programmes, which include the First National Development Plan (FNDP, 1966), the Second National Development Plan (SNDP, 1972), the Third National Development Plan (TNDP, 1980), the New Economic Recovery Programme (NERP, 1987), the Fourth National Development Plan (FNDP, 1989), and the current Structural Adjustment Programme (SAP).

Except for the World Bank and IMF supported SAPs, all the home-grown plans and programmes were largely closed state-led growth strategies. However, in the 1980s, after

⁵ In nominal terms this figure represents a downward trend from the 1996 external debt stock level.

experiencing the limitations of central planning, the inefficiencies of state-owned enterprises in production, the misallocations caused by price distortions, and government's failure in policy making, Zambia began to strengthen her market-price system via the SAP. Supported by the IMF, World Bank, and other cooperating partners, the pace of these adjustments was accelerated in the 1990s when the MMD government took over.

These adjustments include:

- (1) Privatization of state-owned companies including the mining giants, the Zambia Consolidated Copper Mines (ZCCM), which constituted a fiscal drain on government revenue;
- (2) Liberalization of domestic trade, international trade and the foreign exchange market;
- (3) Strong fiscal policy, which includes government, operating on a cash budget to reduce inflation;
- (4) Health, and education sector reforms, which include the introduction of user fees;
- (5) Transformation of the civil service to make it more efficient and in order to improve conditions of service for civil servants;
- (6) Transformation of the agriculture and transport sectors.

One of the long-term goals of these adjustments was to stimulate growth on a sustainable basis. Unfortunately, in spite of these adjustments, the Zambian economy has not

undergone fundamental structural alterations to enable the government address the country's declining economic challenges.

CHAPTER 3

TRENDS IN FDI

3.1 Global trends in FDI

It is worthy noting that FDI has a very long history, dating as far back as the first decade of the 20th century. The International Finance Corporation (IFC, 1997: p11) informs us that, “Early in the twentieth century, a large part of the world’s infrastructure was developed through foreign direct investment, including electric power in Brazil and telecommunication in Spain. By 1914, the world stock of FDI was estimated at US \$15 billion, about one third of all international investment at the time. The United Kingdom was then the largest source of FDI, even when the stock of world FDI rose to US \$66 billion in 1938. This pattern however, shifted after the World War II, as U.S. firms became the main source of FDI.”

During the period 1950s through the 1970s most developing countries generally practiced closed state-led policies, which tightened policy restrictions on FDI, and eventually led to severe trade distortions. The currently perceived advantages of FDI were thus not widespread in the 1950s and 1960s. Studies consulted observe that some influential economists argued in those decades that multinationals were harmful for the host country and created a hostile environment to FDI. The structuralism theorists for instance,

advocated inward-oriented policies, import-substitution practices and an activist role of the state in the economy for the Less Developed Countries (LDCs) in general. This idea in turn, resulted in a negative response of the governments and populations of these countries to the entrance of FDI.

In addition, as observed by some studies the diffusion of the Keynesian paradigm in those decades also helped develop a deep faith in the strong states and demand policies as the proper way to foster development. These policies led to a drastic drop in world FDI. According to the IFC (op cit: p12), “Chile, Egypt, Venezuela and Zambia, to mention just a few, saw massive disinvestments despite their abundant natural resources, as a result of deliberate policies favouring domestic public investment in extractive industries.” For instance Zambia recorded US -\$297 million of FDI in 1970.

The stagnation in the flow of FDI to developing countries continued into the first half of the 1980s, as developing countries struggled to restore economic stability amidst falling commodity prices, recession in industrial countries and high global interest rates that together triggered a debt crisis. To revitalize their economies, most developing countries began to implement market-oriented economic policies.

In response to these policy changes FDI flows to developing countries began to increase in the second half of the 1980s. With continued liberalization in the 1990s FDI, largely driven by privatisation grew in infrastructure. Privatisation accounted directly for \$38 billion in FDI to developing countries, in 1988-1995 (IFC, *ibid*: p13).

With an exception of the last two years, the flow of FDI to developing countries in the last decade witnessed some dramatic increases. As shown in table 3.1, global FDI rose from US \$61 billion during 1982-1986 to US \$174 billion during 1987-1991. The flow of global FDI continued to grow rapidly and even accelerated somewhat in the second half of the 1990s. Although the year 2000 witnessed a very strong growth of FDI at a record of US \$1,271 trillion in nominal terms, the pace was slightly slower than in the previous three years. During 1995-98 for instance, global FDI increased at an annual average rate of over 100 %, whereas the period 1998-99 witnessed an annual increase of 55%. The 1990s also witnessed an increase in the number of bilateral investment treaties and multilateral agreements aimed at promoting and regulating investment.

However, most of the studies consulted acknowledge the view that for a long time the state of distribution of global FDI has been so skewed that it takes place largely in developed countries. As shown in table 3.1, during 1982-1991 developed countries accounted for an average of 76 percent of inward global FDI. Although there was a drop during 1992-1994 developed countries still accounted for an average of 63 percent of global FDI. UNCTAD (2001: p9) informs us that, “The “*Triad*” – Japan, The European Union (EU) and the United States – has for a long time been both providers and receivers of most global FDI. During 1998-2000 the Triad accounted for three-quarters of global FDI inflows and 85 percent of outflows, and for 59 percent of inward and 78 percent of outward FDI stocks.”

Table 3.1: Global FDI Inflows, 1982-2000*(Billions of dollars and percentages)*

Year	Developed countries	Developing Countries	Central and Eastern Europe	All countries
	Value (Billions of dollars)			
1982-1986	43	19	0.02	61
1987-1991	142	31	0.6	174
1989	172	29	0.3	200
1990	176	35	0.3	211
1991	115	41	2.5	158
1992	111	55	4.4	170
1993	129	73	6	208
1994 ^a	135	84	6.3	226
1995	204	113	2	330
1998	483	188	4	693
1999	830	222	5	1075
2000	1005	240	4	1271
	Share in total ^b (percentage)			
1982-1986	70	30	0.03	100
1987-1991	82	18	0.4	100
1992	65	32	3	100
1993	62	35	3	100
1994*	60	37	3	100
1995	63.4	32.3	4.3	100
1996	58.8	37.7	3.5	100
1997	58.9	37.2	4	100
1998	71.5	25.8	2.7	100
1999-2000	80	17.9	2	100
	Growth rate ^b (percentage)			
1982-1986	24	-11	3	11
1987-1991	0.5	16	278	4
1992	-3	34	81	8
1993	16	34	35	22
1994*	5	15	5	8

a Based on preliminary estimates.

b Calculated on the basis of FDI flows expressed in millions of dollars.

Source: Own assembly using UNCTAD, 1995, 1999, 2001 data

The main driving force behind the recent upsurge in FDI flow to developing countries has been privatisation. This is largely because most industrial countries have had the tendency to invest in or buy companies that were already highly vibrant by way of Mergers and Acquisitions (M&A), rather than creation of new ones (Greenfield Investment). Studies by the World Bank (1999: p48), Miller and Sumlinski (1994: p8) and many others find support for this view. As discussed by Miller and Sumlinski (ibid), “the increase in FDI flows to developing countries could be related to the privatisations that had taken place in the past years. During 1988–1992, more than three-quarters of financing from foreigners was in the form of FDI. A large share was attracted by Latin America, accounting for an important part of the overall privatisation activity.”

The points of views favourable to FDI have become widespread in the recent years and consequently the attitude of many developing countries has changed significantly. They have become more willing to offer numerous financial and non-financial incentives to multinational corporations in order to encourage them to increase direct investment flows (Morrisset and Pirnia, op cit: p11-15).

It should be mentioned that the distribution of FDI is also disproportionate even among developing countries, and has been concentrated in a few leading Southeast Asian and Latin American countries. Africa receives the least share of FDI to developing countries. For instance, as observed by (UNCTAD, op cit), “From 1992 to 1997 developing countries altogether, though slowly increased their share of world FDI from 29% to 37%, Africa attracted a disproportionately low annual average of only 1.7%, during the same period.”

**Table 3.2: Share of the largest recipients of FDI flows
among developing economies, 1985 and 2000 - Top 10**

(Percentage)

Economy	1985^a	Economy	1998	Economy	2000^b
Saudi Arabia	20.4	China	28	China	19.2
Mexico	11.3	Brazil	16	Hong Kong, China	16
Brazil	9.2	Mexico	6.7	Brazil	14.4
China	7	Argentina	3.7	Argentina	6.5
Singapore	6.9	Poland	3.7	Mexico	5.6
Malaysia	5.5	Malaysia	3.3	Korea, Republic of	4
Egypt	4.7	Chile	3.3	Singapore	3.1
Bermuda	4.6	Thailand	3.2	Bermuda	2.8
Hong Kong, China	4.3	Venezuela	2.5	Chile	2.7
Argentina	2.7	Russian federation	2	Cayman Islands	2.4
Top 10 total	76.6		72.4		76.7

a Average 1983-1985

b Average 1998-2000

Source: World Bank, 1999, UNCTAD, 2001

Similarly, during 1998-2000 Africa was not among the top 10 recipients of global FDI to developing countries. China that seems to be the most popular host, and one of the success stories of global FDI attracted an annual average of 24 percent. Brazil was generally among the top 3 during the same period with an annual average share of 16 percent (See table 3.2). Africa's status remained nearly the same in 1999, but was however represented among the top 30 recipients, by Nigeria, South Africa and Egypt Arab Republic, altogether with a total share of only 3.7 percent of the total FDI to all developing countries (World Bank 2001). It can also be seen from table 3.2 that over the last two decades, the top 10 host countries account for more than 70 percent of all FDI flows to developing countries. The World Bank (1999) classified these top 10 recipients as those that possessed some more important demand side determinants of FDI, which

included the market size and increased openness in the case of China, and improved liberal economic policies.

3.2 FDI trends in Africa

With respect to FDI flow to all developing countries and more so to all countries in the world, Africa has long been marginalized. FDI flow to Africa was on annual average, only US \$1.7 billion during 1981-1985, with respect to US \$19.4 billion to all developing countries and US \$57.2 billion to all countries in the world (table 3.3). In nominal terms, the annual averages of FDI flows to Africa further increased to US \$3.8 billion during 1991-1995 from US \$2.8 billion during 1986-1990. Although this is the case Africa's share of FDI with respect to that of the two regions has had a declining trend over time. For instance, whereas during 1981-1985 and 1991-1995 Africa's share of global FDI declined from 2.9% to 1.7% respectively, its (Africa) share with respect to FDI flows to all developing countries however showed a slight increase, from 8.6% during 1981-1985 to 10.8% during 1986-1990 before dropping to 5.4% during 1991-1995.

The skewed distribution of FDI among developing countries is also evident within Africa. As shown in table 3.3 investment flows to Africa as a whole are concentrated in a handful of countries that largely constitute the continent's largest oil exporting countries.

Table 3.3: FDI inflow to Africa, 1981-1995
(Billions of dollars and percentages)

Region/country					Total	Annual average		
	1981	1985	1990	1995	1981-1995	1981-1985	1986-1990	1991-1995
All countries	63.7	58.5	203.8	314.9	2144.4	57.2	156.4	214.8
Developing countries	20.6	15.4	33.7	99.7	578.6	19.4	26	70.3
Africa	1.4	2.9	2.3	4.7	41.3	1.7	2.8	3.8
Africa's share in(percent):								
All countries	22	4.9	1	1.5	1.9	2.9	1.8	1.7
Developing countries	6.8	18.5	6.8	4.7	7.1	8.6	10.8	5.4
Oil-exporting countries of Africa, (billions of dollars)	1.1	2.5	1.2	3.3	30.7	1.4	2	2.7
Of which								
Egypt	0.8	1.2	0.7	1	11.5	0.7	1.1	0.7
Nigeria	0.5	0.5	0.6	1.3	11.2	0.4	0.7	1.2
Other, non-oil exporting countries of Africa	0.3	0.4	1	1.2	10.5	0.3	0.8	1.1
Share in Africa's total (per cent)								
Oil-exporting countries	80.5	87.6	52.2	70.2	74.3	83.7	72.2	72.3
Egypt	53.6	41.2	30.4	21.3	27.8	41.3	37.8	18.6
Nigeria	38.9	16.7	26	27.3	27.1	24	25.6	32.4
Other countries	19.5	12.4	47.8	29.8	25.7	16.3	27.8	27.7

Source: UNCTAD, 1996

These alone account for over 80 percent of the flows to Africa during the first half of the 1980s. Later, their share declined, but remained at a high level of 60 percent at the beginning of the 1990s. Within the group of oil-exporting countries, inflows are

concentrated in Egypt and Nigeria that together absorbed over 50 percent of the total flows to Africa between 1981 and 1995, or 75 percent of the flows to the oil-exporting countries (See table 3.4).

The structure of FDI in Africa is such that both the flows and stocks of FDI are concentrated in a handful of countries, largely dominated by oil-exporting and mineral rich countries (See table 3.4 and 3.5). As shown in table 3.5, South Africa has had the largest stock of FDI in Africa since the 1970s, followed by Egypt. Morocco, Angola, Tunisia, and Namibia also experienced dramatic increases in their FDI stocks in the 1990s.

Though not surprising, African countries have generally not been able to attract FDI due to their small market size, poor infrastructure, political instability, corruption and restrictive policies towards foreign investment. For many observers the African countries that have been able to attract most FDI have been those with the largest tangible assets such as natural and mineral resources as well as large domestic markets. South Africa, Nigeria, and Angola to mention just a few, have traditionally been the main recipients of FDI within the region. According to Morriset (2000), “About 65 percent of total FDI inflows to Africa concentrated in South Africa, Nigeria and Cote d’Ivoire in 1996/1997, which also accounted for about two-third of the sub-continent’s GDP during the same period.”

Table 3.4: Ranking^a of host countries in Africa, by size of FDI inflows, 1980-1990 - Top 30
(Millions of dollars)

Country ^a	(Annual averages)		
	1980-1985	1986-1990	1991-1995
Nigeria	210.2	723.3	1250.6
Egypt	665.3	1067.9	692.2
Morocco	56.8	95.4	516.2
Angola	108.6	69.8	401
South Africa	82.5	-1.9	273.4
Tunisia	212.2	74.1	235.8
Ghana	9.8	8.8	129.1
Libya Arab Jamahiriya	-408.3	17.6	128
Namibia	16.4	6.7	61.4
Swaziland	10.2	49.6	59.4
Zambia	26.3	112.5	53.1
Cameroon	154.1	-16.2	45.2
Mozambique	1.1	5	29.4
Equatorial Guinea	1.1	3.5	26.3
Guinea	0.3	13.4	25.3
Zimbabwe	0.5	-12.7	24.2
Seyshelles	10	21.4	22.2
Mauritius	3	25	18.7
Sierra Leone	-4.9	-13.8	14.9
Madagascar	1.7	11.1	14.8
Lesotho	4	11.9	13.4
United Republic of Tanzania	8.1	-0.3	12.4
Algeria	51.6	8.5	12.3
Kenya	26.5	39	10.1
The Gambia	-0.1	3.1	9.5
Liberia	26	239.7	9.4
Benin	1.1	0.5	7.2
Mali	4	-1.1	7.2
Chad	31.5	14.1	7
Senegal	9.3	1.8	6.7

a Ranked on the basis of FDI inflows during 1991-1995

Source: UNCTAD, 1996

Table 3.5: FDI inward stocks in Africa, 1975-1995, Ranking of the top 30 hosts

Country ^a	<i>(Millions of dollars)</i>				
	1975	1980	1985	1990	1995
South Africa	8 609	16 519	9 024	8 502	10166*
Egypt	-	2 039	5 483	4 515	6 103
Morocco	173	672	640	1 586	4 055
Angola	...	37	652	1 001	3 006
Tunisia	-	935	1 514	1 831	2 656 ^b
Namibia	2 049	1 714 ^b
Liberia	81	...	269	1 462	1 510
Cameroon	73	330	1 125	1 044	1 271
Gabon	295	512	833	1 209	1 200
Zambia	...	25	121	684	1 102
Nigeria	3 648	6 655	6 804	1 160	1 044 ^c
Ghana	207	230	273	317	962
Botswana	-38	266	515	819	961
Cote d'Ivoire	219	531	700	977	865
Swaziland	...	149	184	435	708
Congo	244	308	477	552	569
Senegal	...	360	194	304	338
Zaire (now Congo DR)	58	482	393	319	333
Togo	-29	176	210	274	291 ^b
Guinea	...	102	...	169	266
Chad	41	...	186	242	265
Niger	28	189	204	261	264
Mauritius	-	20	37	162	262
Malawi	...	100	138	210	236
Rwanda	10	55	134	213	227
Seyshelles	...	21	42	127	213 ^b
Mozambique	...	4	7	31	178
Madagascar	50	36	47	103	177
Lestho	...	5	24	81	161
Ethiopia	-	-	-	-	158
Africa	13 329	28 579	26 410	26 351	37 804

a Ranked on the basis of FDI stocks in 1995

b 1994

c 1992

** Preliminary estimates

Source: UNCTAD, 1996

However, because of the wide recognition of the contribution that FDI can make to their economic development and integration into the world economy, most African countries made considerable efforts to improve their investment climates, over the last decade of the 20th century. They made major improvements in the environment and practice of liberal policies and also offered incentives to foreign investors. Most countries for instance, eased restrictions on FDI inflows and aggressively offered tax incentives, import duty exemptions and other forms of subsidies⁶. In support of this view UNCTAD (1999), informs us that, “Most African countries have eased restrictions on FDI inflows, entering into international agreements (providing for investment guarantees and dispute settlement mechanisms), and concluding bilateral investment treaties to protect foreign investors’ interests.”

In response to these policy reforms FDI has not only increased in the recent years, but there has also been a remarkable shift in the flow of FDI, from the dominant traditional resource based to non-resource based sectors such as manufacturing, communication and transport. The World Bank (2001: p40) observes that, countries that are not major exporters of oil or minerals received about half of FDI inflows to Sub Sahara Africa in 1995-2000, compared with 24 percent in 1991-1995. For example, Lesotho, Mozambique, Tanzania, and Uganda which receive the bulk of their FDI in agriculture, light manufacturing, and utilities saw a sharp increase in FDI inflows.”

⁶ See the investment incentives offered by Zambia in appendix 6

CHAPTER 4

FDI IN ZAMBIA

4.1 History and trends of FDI

At independence in 1964, the Zambian citizens took over the reins of government but the economic sector remained in the hands of non-citizens, particularly Europeans. This was the direct result of the colonial policy of denying economic opportunities to local citizens. The pre-independence policies were implemented in such a way that they excluded the Zambian citizens from major economic activities. Thus, during the pre-reforms period, from 1964 to 1968, non-Zambians controlled the economy of Zambia, with little government inputs into the management of almost all the important sectors. In support of this view Saasa (1987: p33) observes that, “Following the ‘accommodation years’ (1964-1968) during which period foreign investors owned and controlled all the commanding heights of the Zambian economy, the state began to increasingly seek an upper hand in the management of its economic sectors.” This process of re-organisation was initiated by the ‘Mulungushi’ reforms in the non-mining sectors followed by the ‘Matero’ reforms that mainly covered the mining industry.

The government was quick to react to this scenario, through the Mulungushi reform declaration. In his address, at the Mulungushi conference on the 19th April, 1968, the first republican President, Dr. K. D. Kaunda made the following pronouncements, (GRZ, 1968: p1):

(1) *“Comrade Vice-President, Mr. Speaker, comrade National Chairman, comrade National Councillors, Guests, Friends and Countrymen.*

“Today we continue on our never-ending journey of discussing the importance of man and planning for his all-round development. Several times before, I have declared in very clear terms that political independence without matching economic independence is meaningless. It is economic independence that brings in its wake social, cultural and scientific progress of man. No doubt political independence is the key, but only the key to the house we must build.”

(2) *“Comrades, time is now that we must take urgent and vigorous steps to put Zambian business firmly in the hands of the people themselves just as political power is in their hands.”*

(3) *“All along we were painfully aware that while we are entering into all the most difficult fields, resident expatriate business was taking advantage of the economic boom and making excessive profits. We tried to admonish them even pleaded with them, but the major faults of these businesses are still not corrected. They operate price rings with similar companies and*

create a false monopoly position because of buoyant demand and the difficult supply position. We have to safeguard the national economy and prevent unfair exploitation of the present boom conditions. I have, therefore, decided that I shall ask the owners of certain firms to invite the Government to join their enterprise.”

In 1969 the Matero reforms were also declared. Unlike the Mulungushi reforms that targeted the non-mining sector, the Matero reforms targeted the mining sector. According to these reforms private companies both in mining and non-mining sectors were to surrender 51 percent of their controlling shares to the state. According to GRZ (ibid: p38-39), some of the first targets of these reforms were, “Anros Industries Ltd., Monarch (Zambia) Ltd., Crittal-Hope (Zambia) Ltd., Anglo-African Glass Co. Ltd., P. G. Timbers, Baldwins Ltd., Steel Supplies of Zambia Ltd., Zamtimbia Ltd., May and Hassell (Zambia) Ltd. And Johnson and Fletcher, Nicholas Quarries, Gerry’s Quarries and Greystone Quarries”. These were largely building construction related companies.

Thus, Foreign Direct Investment (FDI) though inconsistently⁷ and often overwhelmed by both internally and externally conditioned government policies and macroeconomic situation, has been present in Zambia since independence. One of the earliest negative policy responses of FDI inflow to Zambia was its sharp decline just after the implementation of the Mulungushi and Matero reforms. Foreign investors were displeased with the reforms and in response a number of them closed down their

⁷ See figure 3

companies and moved abroad. This led to massive disinvestments, especially in 1970 when FDI flow to Zambia was estimated at US -\$297 million⁸. For Zambia, this is so far the worst FDI flow record since independence.

In the early 1970s FDI remained low as the government struggled to restore foreign investor confidence. In support of this view Mulenga (1996: p11) informs us that, “the industrial act of 1977 which, in essence constituted Zambia’s investment code, outlined numerous incentives for foreign investors.” As shown in appendix 3, the annual average inflow of FDI slowly began to rise and is estimated at US \$34 million between 1971-1976. In 1977 FDI declined by 42 percent to US \$18 million and on annual average increased to US \$37 million during 1978-1979.

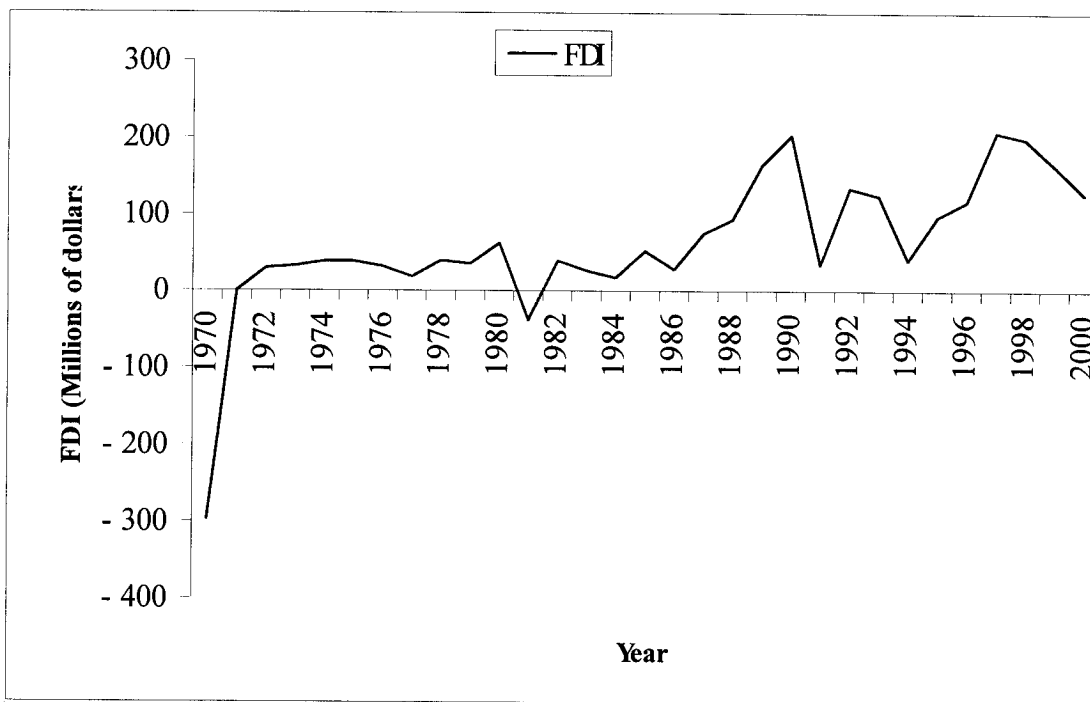
For Zambia, the period between 1980 and 2000 generally witnessed the advent of enhanced FDI inflow. This could be attributed largely to the view that during this period Zambia had with vigour pursued liberal economic policies. Important to this framework, Zambia had embarked on a very painful and rigid IMF and World bank supported Structural adjustment programmes (SAP) which saw a total shift from the previous closed one party state-led growth strategies to more open and market friendly multi-party state-led economic management.

In spite of these efforts by government the inflow of FDI to Zambia remained sensitive to other external shocks, which include the 1979/80 oil crisis and the debt crisis of the 1980s. In nominal terms, FDI in Zambia fell drastically to US -\$38 million in 1981 from

⁸ See appendix 3

US \$62 million in the previous year. FDI steadily rose to US \$39 million in 1982, and oscillated at an annual average of US \$31 million between 1983 and 1986. 1987 saw a sharp rise in FDI to US \$75 million from US \$28 million in 1986. This increasing trend continued up to 1990 when FDI was estimated at US \$203 million, which is just US \$4 million below the peak attained in 1997.

Figure 4.1: FDI trend in Zambia, 1970-2000.



Source: Own⁹

The drastic drop in FDI to US \$34 million in 1991 reflects an erosion in foreign investor confidence, which could be strongly linked to, among other things the uncertainties introduced in the economy during the period of transition from one party state to multi-party state. The declining trend in FDI to Zambia began to witness some reversals as soon

⁹ Graph made using UNCTAD 1996, World Bank 1995, and 2002a data.

as the political situation began to stabilize. Coupled with continued liberalisation in the early 1990s, FDI began to rise and reasonably stabilized at an average of US \$174 million between 1997 and 2000 (see appendix 1). It is noteworthy that these values of FDI inflows on annual averages represent 3.4%, 3.8% and 4.3% of the country's real GDPs for the periods 1984-1989, 1990-1995 and 1996- 2000 respectively.

The driving force behind the upsurge in the flow of FDI in the 1990s was the privatisation of nearly all government owned enterprises since 1992. This reduced the state's control of major economic activities once again, and also marked a fundamental change in the institutional structure of the economy. However, the economic impact of privatisation has been smaller than it could probably have been had the government moved swiftly to privatise the country's mines, Zambia Consolidated Copper Mines (ZCCM) which were the earners of Zambia's foreign exchange.

4.2 Structure and Pattern of FDI

The structure and pattern of FDI to any country is generally determined by a number of both supply and demand factors. However, in this study focus is limited to country-specific demand side determinants which include natural resource endowment, market size, returns on investment, to other government and macroeconomic policies, such as tax policies and incentives, liberalisation of both domestic and international trade, privatisation, liberalisation of the foreign exchange market and stability in social, political, and economic spheres. It is noteworthy that the importance attached to each of

these factors depends on the type of investment and the motivation or strategy of the investors.

The structure of inward FDI in Zambia has traditionally been determined by her natural resource endowment. Agriculture and Mining, mostly of copper, have been dominant in the resource-seeking motive. However, in the recent years, there has been a shift from natural resource seeking to service provision. For instance, under market seeking, mobile phone companies namely TELECEL and CELTEL have dominated the telecommunications sector. The computer market is growing in Zambia, although the market is limited. Many corporations, regardless of their size are introducing computer applications in their operations in order to enhance efficiency and productivity. The introduction of Internet services in 1995 is also spurring demand in this sector.

In the recent years, the main sources of FDI to Zambia have been from the United Kingdom, South Africa, mostly involving South African subsidiaries or multi-national corporations, like Anglo American Corporation in mining, hotels, agriculture and other businesses. The Commonwealth Development Corporation (UK) has had shares in a number of agricultural firms. There is a reasonable presence of US companies in the Zambian market¹⁰.

The non-mining sectors such as agriculture and tourism have considerable potential to attract FDI. This assertion is conclusive in that Zambia has favourable agricultural

¹⁰ Appendix 5 shows some of the foreign affiliates and the geographical distribution of FDI in Zambia.

ingredients in terms of large tracts of uncultivated arable land, adequate water supply and a good climate. For tourism, the country has numerous natural attractions, including Victoria Falls, and relatively abundant wild life.

4.3 Institutional and Regulatory framework

Besides her natural resource endowment, Zambia has to a large extent structurally satisfied most of the demand side determinants¹¹ alluded to in the preceding section. In addition, she has generally been politically and socially stable. From this point of view Zambia can be said to be an attractive FDI destination. In support of this view Morisset (2000: p9) conducted an econometric study in the 1980s, on the variations in the business climate as a source of attraction of FDI, for a group of 29 African countries, which included Zambia. He found that at the end of the 1980s the most attractive countries by rank, were Zambia, Mauritius, Chad and Benin (Table 4.1). Zambia, on the overall, ranked fairly well, as the top 5 maintained stability in their ranks.

As an integral part of the country's SAP and liberalisation policy, the Zambia Investment Centre (ZIC) was established in 1992 by the Investment Act of 1991, which was replaced by the Investment Act of 1993. It is noteworthy that before the inception of ZIC the only government agency that dealt with foreign investors was the Investment Co-ordinating Committee (ICC) that was established under the Investment Act of 1986. ICC unlike ZIC had very little to do with investment promotion.

¹¹ See adjustments in the preceding chapter

Table 4.1: Comparison over time of the business climate for FDI in Africa – Top 5

Rank	Average 1986-1990	Average 1991-1994	Average 1995-1997
1	Zambia	Benin	Namibia
2	Mauritius	Namibia	Mali
3	Chad	Chad	Mozambique
4	Benin	Zambia	Zambia
5	Rwanda	Mozambique	Chad

Source: Morisset, 2000.

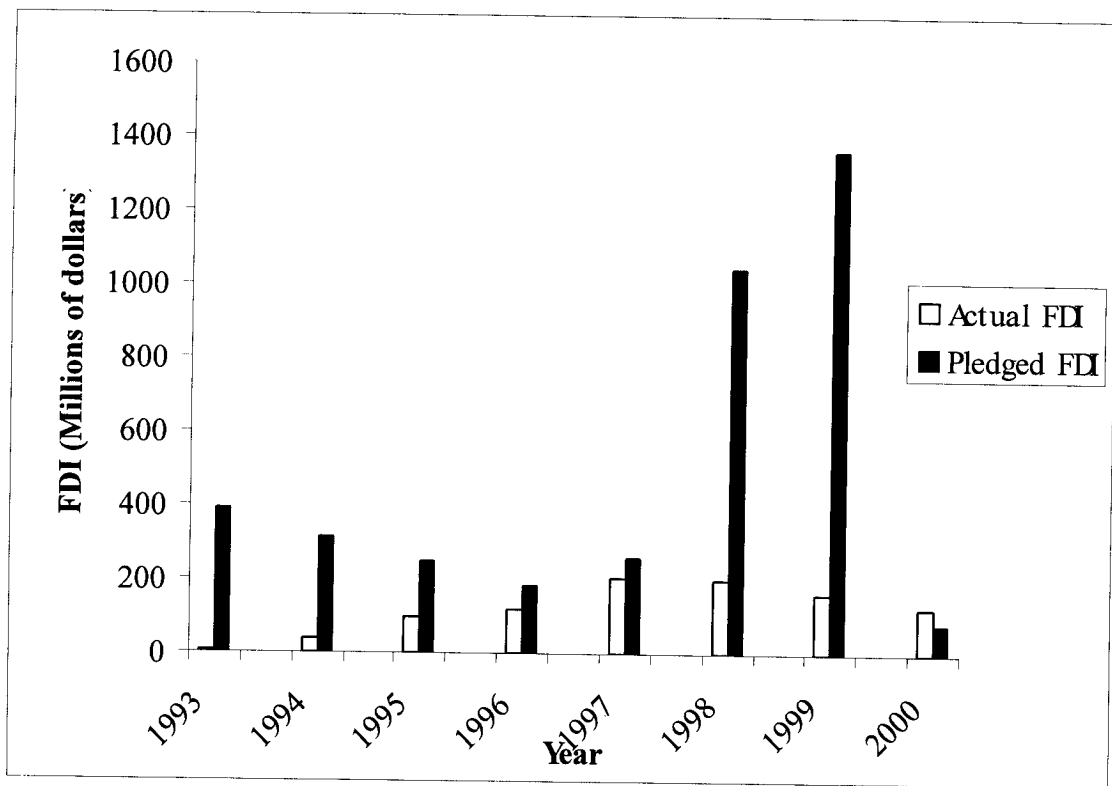
Designed to be a “one-stop” agency, ZIC has the following mandate:

- To promote and facilitate investment in Zambia.
- To monitor the performance of the investment certificate holding enterprises.
- To establish and maintain liaison arrangements.
- To assist investors in securing secondary licenses, authorization and permits from all local authorities.
- To keep records of technology transfer
- To collect, co-ordinate and disseminate information on relevant government laws, regulations and technical matters.
- To undertake studies such as those pertaining to identification of investment opportunities, constraints and attractive incentives.

Records of pledges of FDI, available at the Zambia Investment Centre (ZIC) provide ample evidence that Zambia is a potential FDI destination. But, as to whether or not these pledges are, or will be translated into actual investments is an area of serious concern.

Some of these investments are however impeded by occasional government interference in the private sector, a weak judicial system and the inadequacy of the law enforcement system that tarnish the image of Zambia's liberal investment policy framework, and in turn erodes foreign investor confidence. In addition, it appears currently difficult for ZIC to follow up these pledges, partly due to lack of resources and also because these investors are not mandated to register with ZIC. Hence, the discrepancy between the pledged FDI and the actual investment is significantly high (figure 4.2).

Figure 4.2: Actual FDI and Pledged FDI, 1993-1998.



Source: Own¹²

¹² Chart made using World Bank (2000) data and ZIC (2002) survey reports data (unpublished)

According to ZIC survey reports¹³, pledged inward FDI in 1993, was US \$389 million, compared to the actual US \$124 million. The peak, according to pledges, should have been attained in 1998 at a record of US \$1,043 million, but only US \$198 million was translated into actual investment.

Thus, Zambia has undeniably not only structurally adjusted its economy as shown in the preceding chapter but has also tried to make itself an attractive FDI destination. The strength of this assertion lies in, among other things the treatment given to foreign firms. The Investment Act for instance, guarantees that business and property rights shall be respected and that no investment of any description can be expropriated unless Parliament has passed an act relating to the compulsory acquisition of that property and in which case the act further guarantees full compensation at market value and must be convertible at the current exchange rate.¹

The Act also provides general incentives for investment in rural enterprises, farming and non-mineral exports. Companies listed on the Lusaka Stock Exchange (LuSE) for instance, also qualify for reduced corporate tax¹⁴. According to UNCTAD (1996: p435), “There are no restrictions in Zambia on the repatriation of profits from investment except for profits from export of copper, zinc, cobalt and lead. Even in this case exporters can retain up to 70 percent of their export earnings in the initial years of the investment and 50 percent thereafter. Special incentives granted to all investors include exemptions from customs duties, sales duties and taxes on machinery and equipment required for the

¹³ This is an unpublished source.

¹⁴ Only applies to study period, as is subject to amendments.

establishment, rehabilitation and expansion of eligible enterprises. Foreign investors are permitted to have foreign currency accounts in commercial banks. Property and business of foreign investors in Zambia are protected from compulsory acquisition.” For a comprehensive list of incentives offered through the Investment Act of 1993, see appendix 6.

Other efforts can be seen in Zambia’s membership to the Multilateral Investment Guarantee Agency (MIGA), which guarantees foreign investment protection in cases of civil strife, and any other form of disaster.

CHAPTER 5

LITERATURE REVIEW

5.1 Introduction

There is by now, a fairly extensive literature on the general topic of the economics of Foreign Direct Investment (FDI) around the world. It is noteworthy that despite this fact there is no unique established theory on FDI. Studies on FDI vary in foci and approaches. For instance, some researchers have preferred country-specific investigations, while others have opted for investigations on a broad cross-section of countries. In support of this view, Jong and Vos (1994a: p1) observe that, “contributions to the FDI literature can roughly be categorized as follows: (a) theoretical approaches, (b) descriptions of trends, (c) studies on the determinants of FDI, (d) macroeconomic analyses of the effects of FDI inflows on economic growth, (e) microeconomic analyses of the effects of FDI inflows in specific industries, and (f) descriptive studies in which government incentives and disincentives are discussed.” Prominent in these studies are UNCTAD (World Investment Reports), IMF (International Financial Statistics), The World Bank (World Development Indicators), and the Organisation for Economic Corporation and Development (OECD). These reports regularly analyse a variety of aspects of FDI, and provide extensive statistics on FDI. Together with studies conducted from time to time by other leading

Economists, these materials offer a comprehensive introduction to many FDI related issues on both conceptual and empirical levels.

The contribution of FDI to economic growth has been debated quite extensively from a theoretical point of view in the 1950s and 1960s to the current empirical approaches based on the new growth theories. Thus, there is now a considerable literature on the impact of FDI on growth and many other economic variables, including savings.

A review of literature on FDI has shown that very little has been written on Zambia, especially as it relates to the quantitative evaluation of the macroeconomic effects of FDI on the Zambian economy. However, the World Bank, IMF and UNCTAD have over time monitored the flow of FDI in Zambia. For determinants of FDI in Zambia see Mulenga (1996)

According to the International Finance Corporation (IFC, 1997: p9), “The IMF defines foreign investment as FDI when the investor holds, 10 percent or more of the equity of the enterprise. As a rule of thumb, this is usually enough to give a say in the management of the enterprise. In addition, Wong with Jomo (2001: p17), inform us that, “The IMF defines FDI as the flow of investments from abroad which include equity capital, reinvested earnings and also short-term and long-term borrowings from parent companies or their affiliates.”

Other scholars define FDI very broadly, as a form of inter-firm cooperation that involves equity and/or management control of foreign enterprises, quasi-investment arrangements (licensing, leasing, franchising, etc.), joint ventures and R&D cooperation (see De Mello (1997)).

A guiding criterion in defining FDI is that it is investment made to acquire a lasting interest and an effective voice in the management of an enterprise. Other components of foreign investment include Foreign Portfolio Investment (FPI), loans, contracts, and many other forms of property owned by foreigners in the host country, including intellectual property. FDI is distinguished from FPI in that, the latter is largely made by individuals and is purely financial movement of capital, whereas FDI is essentially made by corporations and involves international movement of capital, technology, and managerial and organisational skills.

5.2 Theoretical and Conceptual Review

A review of literature further shows consensus on the view that while bank and trade related lending have declined in relative importance, FDI has been soaring since the last decade. Oman (2000: p15) and Klein et al (2001: p1) respectively inform us that “Competition among governments to attract corporate investment appears to have heated up in recent years”, and that “The last decade of the 20th century has seen major shifts in size and composition of cross-border capital flows into developing countries. Net debt flows have become less and less important. Portfolio flows have become firmly

established. FDI has come to swamp other financial flows.” Zambia has undertaken liberalization reforms since the early 1990s with view to reap the benefits of FDI.

The analysis of the effects of FDI on the recipient’s economy has equally received ample attention in the development literature. A wide array of economic and non-economic effects has been analysed. Jansen (1993: p18) observes that, “in the early econometric work on the impact of capital flows, all types of inflows were aggregated and, generally, estimated by the current account deficit. The traditional view based on Harrod–Domar type of growth models, asserted that, capital flows would add to the investible resources and would ease foreign exchange shortages and would thus lead to an increase in investment and in the rate of growth. In subsequent econometric testing of the impact of capital inflows on domestic savings or on the economic growth rate, aggregate inflows were split up into the main components, such as aid, FDI, and other inflows, and the results generally suggested differential impacts for the various types of inflows.”

A number of scholars, including Wong with Jomo (2001: pi) have observed that despite the recent explosion in its flows, the effects of FDI on the economic development of the host countries are unclear and have provoked heated debate amongst researchers, government planners and policy makers. Under conventional expectations, FDI brings positive effects to the host nation in terms of new investible funds, augmenting domestic savings and foreign exchange earnings, leading to economic growth. Empirical studies by Chenery and Strout (1966); Cohen (1968), Ghazali (1990), and Stoneman (1976) in Wong with Jomo (Ibid): p8; Papanek (1973); Ruffin (1993), in Jong and Vos (1994a:

p22); Klein, Aaron and Hadjimichael (2001: p5); Oman (2000), among many others, show that growth in developing countries is positively and significantly related to FDI.

Similarly, De Gregorio (1992: p61) observes that, “macroeconomic studies using aggregate FDI flows for a broad cross-section of countries generally suggest a positive role for FDI in generating economic growth especially in particular environments.”

Layton and Makin (1993: p35) also agree with this view and observe that, “FDI increases the amount of savings available to a country for investment, and that for developing countries, where the paucity for domestic savings is often a barrier to long-term growth, FDI can be a crucial factor in escaping a poverty trap. The higher levels of investment made possible by foreign investment will lead such countries to steady states at higher levels of capital and per capita income and traditionally accelerate growth”.

Suman and Sanjib (2001) find support for this view and inform us that, “Recent analyses using macroeconomic data suggest that FDI can have a positive impact on growth, particularly when the receiving country has a highly educated workforce, allowing it to exploit FDI spillovers.” Other studies have found that FDI spillovers are greatest in richer countries, while in poor countries the technologies being used are often less attuned to the needs of the economy, limiting the benefits from technological spillovers. The evidence on spillovers between foreign-owned and domestic-owned firms is less clear-cut. While other studies find that sectors with a higher degree of foreign ownership exhibit faster productivity growth, firm-level data provide little evidence of spillovers. Zambia is today classified as one of the poorest and heavily indebted countries in the Sub-Saharan Africa,

and thus with unsatisfactory levels of such attributes as capital, per capita income and education of its workforce.

The view of the presence of a high level of human capital (attained through education), as one channel through which FDI can contribute to economic growth in the host country is shared by Borensztein, De Gregorio, and Lee (1998). In contrast Blomstrom, Lipsey, and Zejan (1992) find no evidence that education is critical. They argue that FDI has positive growth effect when the country is sufficiently rich.

Trade openness has also been found to be another necessary channel through which positive effects of FDI can be exploited by the host nation, and in this regard Zambia has liberalized its domestic trade, international trade and the foreign exchange market. Balasubramanyam, Salisu, and Sapsoford (1996), Cuadros et al (op cit) find support for trade openness as being crucial for obtaining the growth effects of FDI. Balasa et al (1996) find the effect on growth to be stronger in countries with a policy of export promotion (EP) than in countries that pursue a policy of import-substitution (IS), like was the case mostly among developing countries during the 1950s and 1960s.

However, other empirical work, such as the one by Goldberg and Klein (1998) in Cuadros, A., Orts, V. and Alguacil, M.T. (2001), do not find significant links between FDI and trade flows.

Recent literature also prominently points to the role of FDI as a channel of international technology transfer through which economic growth can be brought about, via imitations, competition, linkages and/or training. This is particularly so as multinational enterprises seem to be the principal vehicles for the international transfer of technology¹⁵. In this regard Klein, Aaron and Hadjimichael (op cit: p2) inform us that, “FDI is a key ingredient for successful economic growth in developing countries. This is because the very essence of economic development is the rapid and efficient transfer and adoption of “best practice” across boarders. FDI is particularly well suited to effect this and translate it into broad-based growth, not least by upgrading human capital.”

Ghazali (1996) in UNDP (1999: p128-129) has equally acknowledged the positive growth effects of FDI on the host country. However, he has put a caveat to the above summary statements. He has studied the effects of FDI on trade, BOP, and growth in developing countries. Given the various ways in which FDI affects the host economy, he proposes that for FDI to be used successfully (with net overall benefit), the following conditions should be met:

- Availability of foreign capital does not detract from own savings effort.
- The factor payment cost must be minimised and prudently managed.
- Encourage or require joint ventures so that part of the returns accrues to the locals and is retained by the local economy.
- Get foreign firms to list themselves on local bourses.

¹⁵ The link between technology and economic growth can be found in an OECD (1991) study.

- To enhance positive trade effects, FDI must be concentrated in the tradable sector, especially in export-based activities.
- Local content of output should be raised over time to improve trade effect.
- Moffat's rule should be adhered to (growth of domestic investment should exceed FDI Growth).
- To avoid reliance on foreign capital, developing countries should increase their savings rate and maintain sound economic and political conditions.

Ghazali (ibid: p129), concludes that:

“The above are among the preconditions for ensuring successful use of FDI. Countries using FDI without regard to the above conditions would do so at their own peril. Any moves designed to prevent host countries from instituting such policies, however they are couched, are moves designed to keep developing countries at the bottom of the global economic ladder... With the correct policies, FDI can be of great help to the host countries. Without the correct policies, however, the use of FDI can lead to severe problems especially with regard to the long-term viability of the recipient's balance of payments”.

The IFC (1997: p10), and Jansen (1993: p2) among others, agree on the concept of FDI as an alternative non-debt creating, external funding for economic development. They further agree that FDI does much more than provide developing countries with financing for growth. It brings with them technologies, management techniques, and market access as well, which ultimately tends to spillover into other domestic firms.

Carkovic and Levine (2002: p13) argue that, “While microeconomic studies generally, though not uniformly shed pessimistic evidence on the growth-effects of foreign capital, many macroeconomic studies find a positive link between FDI and growth. Previous macroeconomic studies however, do not fully control for endogeneity, country-specific effects, and the inclusion of lagged dependent variables in the growth regression.” After resolving many of the statistical problems plaguing past macroeconomic studies and confirming their results, they find that FDI inflows do not exert an independent influence on economic growth, and therefore assert that, “While sound economic policies may spur both growth and FDI, the results are inconsistent with the view that FDI exerts a positive impact on growth that is independent of other growth determinants.”

De Mello Jr et al (1997) observe that, the early neo-classical approach to FDI was based on capital arbitrage (capital flows result from interest rate differentials) and the beneficial effects for the host country arise from a larger capital stock, increased tax revenues, increased labour income (or employment) and favourable externalities (diffusion of technology and training). Note that in the tradition of Solow and given diminishing returns to physical capital, FDI affects only the level of income and leaves the long-run growth unchanged. Long run growth can only arise because of technological progress and/or population growth both considered exogenous. That is, FDI will only enhance growth if it affects technology permanently and positively.

Thus, according to endogenous growth models, FDI can affect growth endogenously if it generates increasing returns in production via externalities and productivity spillovers.

Moreover, government policy changes might induce permanent increases in output growth by providing incentives to host FDI. Specifically, FDI is thought to be an important source of human capital accumulation and technological change.

Radical economists, using the savings hypothesis, have challenged this orthodox position. While they acknowledge that there is a considerable literature on the role of FDI as a complement to domestic savings in financing investment for the economic growth of a country, the radical economists have argued that FDI has exercised depressing effects on savings propensities in developing countries, especially when the inflow is too high. This has in turn reduced domestic savings rates and rates of capital formation, and consequently, growth rates. Empirical studies by Griffin (1970) in Jansen (1993: p19); Weisskoff (1972); Rahaman (1968); Leff (1968); Papanek (1973); Gupta (1970) and Ghazali (1990), all in Wong with Jomo (op cit: p36) find support for this radical view.

Griffin (Ibid) has suggested a number of reasons why domestic savings could decline. He argues that, "FDI may pre-empt investment opportunities for local firms and so reduce their corporate savings incentive. It may also reduce household savings if they ease the foreign exchange scarcity and allow the importation of previously unavailable consumption goods."

Recent studies also point to the importance of the volatility of FDI, which can be interpreted as a proxy for factors causing economic and political instability. While FDI is considered to be less volatile than other private flows, it is possible that sudden changes

in the volume of FDI inflows can have a destabilizing impact on the economy. A number of studies consulted found FDI volatility to have a consistently negative impact on growth. One possibility is that economies with high levels of economic uncertainty tend to have lower and/or more variable growth rates, and may also appear less attractive to foreign investors. Among others, Lensink and Morrissey (2000), find support for this view.

Against these arguments, White (1992), in Jansen (op cit: p19) gives an up to date survey of the arguments and the outcomes and concludes that most studies suffer from conceptual and statistical problems, and therefore, fail to lead to meaningful conclusions. Most of the studies engage in cross-country comparative analysis, regressing the savings ratio on a number of variables, which include capital flows. Typically, the capital inflow variable obtains a significant negative coefficient in such regressions, but this result says nothing about the direction of causation between the variables or about the more dynamic interactions among them.

5.3 Empirical evidence

De gregorio (op cit: p61) analyses a panel of 12 Latin American countries in the period 1950-1985. His results suggest a positive and significant impact of FDI on economic growth. In addition, he shows that the productivity of FDI is higher than the productivity of domestic investment. Blomstrom et al (1992) pursue a cross-country analysis of a sample of 78 developing countries. They report that the positive impact of FDI on growth is larger in countries that exhibit higher levels of per capita income. Ruffin (op cit), has



studied the role of FDI in economic growth in Asia and the Pacific in the framework of a model of endogenous growth. He concludes that FDI can contribute to economic growth by bringing in new ideas and lowering the cost of innovation. This is especially so for countries with sufficiently high levels of human capital that can exploit the technological spillovers associated with FDI.

Agrawal (2000: p14), in his study on South Asia finds the impact of FDI inflows on GDP growth rate to be negative prior to 1980, mildly positive for early eighties and increasingly positive over the late eighties and early nineties, supporting the view that FDI is more likely to be beneficial in more open economies. It is noteworthy that prior to 1980 most South Asian countries practiced restrictive policies that were gradually changed over the 1980s, and by the early 1990s, most countries had implemented more open, market oriented policies. He also finds that since 1980, FDI contributed more to GDP growth in South Asia than did an equal amount of foreign borrowing. This suggests that FDI is preferable to foreign borrowing. A strong relation between FDI and trade is also studied by Markusen (1998), and Repkine and Walsh (1998), who highlight re-orientation of trade in the Central European countries to the European Union, which is in turn an important and major source of FDI for Central Europe.

The trade hypothesis is further investigated by Balasubramanyam et al (1996: p93-105). In the context of endogenous growth theory their study employs a cross-country procedure to analyze the relation between trade strategy, FDI and growth in 46 LDCs in 1970-1985. They controlled for possible distortions. For instance, they acknowledged the problem of

FDI data reporting as well as the difficulties to find a criterion to split the sample in those countries that pursue export promotion (EP) and in countries pursuing an inward oriented import-substitution (IS) policy. The model is an augmented production function, which includes exports as the ancillary variable and is expressed as,

$$Y = f(L, K, F, X, t)$$

where y is output, L is labour force, K is domestic capital stock, F is the stock of foreign capital, X is exports and t is a time trend capturing technological changes. They concluded that the elasticity of output with respect to foreign capital was positive, statistically significant and larger in the EP group than in the IS group (the estimated elasticity was positive but insignificant). Also their results confirm the hypothesis that it is FDI and not domestic investment that is the driving force in the growth process.

An endogenous growth model motivates the empirical work where the rate of technological progress is the main determinant of long run growth. They found that the effect of FDI on growth depends on the level of human capital available in the host country. There is a strong and positive interaction between FDI and the level of educational interaction (proxy for human capital) and thus, FDI contributes more to economic growth than domestic investment when the host country has a minimum threshold stock of human capital.

A study by Wong with Jomo (op cit: p19), on the Malaysian economy, show that FDI was an important source of financing, but domestic savings rate relatively contributed more and was more significant than FDI, for Malaysian economic growth during the period 1966-1996.

Fry (1993), conducted a study on a sample of 16 countries. He analyzed FDI in a macroeconomic framework. Taking into account distortions in the 16 economies, Fry examined the effects of FDI in a four-equation macroeconomic framework containing investment, savings, growth and current account equations. This study throws new light on various channels through which FDI can influence these economic variables. The savings function is estimated on the basis of the standard lifecycle saving model, and indicates that FDI has a significantly negative impact on saving in this sample of developing countries. He further finds that FDI has a negative effect on economic growth in the control group. It has the same positive effect on growth as domestically financed investment does in the Pacific Basin countries. So he concludes that, depending on which countries you are talking about, FDI differs in the way it affects savings both directly and indirectly, through economic growth.

CHAPTER 6

METHODOLOGY

6.1 Method of analysis

To test the impact of FDI on economic growth, and on gross domestic savings in Zambia the study uses regression analysis and employs Ordinary Least Squares (OLS) method. The data is processed using an econometric software package-Personal Computer Generalised Instrumental Variables Estimators (PCGIVE) 8.0. The size, sign and significance of FDI should indicate the strength and direction of its effects on economic growth and gross domestic savings.

6.2 Model specification

The analysis in this study is largely inspired by a model developed by Wong with Jomo (2001). Among others, this approach has also been used by Fry (1993), Layton and Makin (1993), Balasubramanyam, Salisu and Sapsford (1996), and Agrawal (2000).

6.2.1 Notes on the models and data

In the empirical testing of the impact of FDI on economic growth and gross domestic savings in Zambia the following transformations are made to the growth and savings equations used by Wong with Jomo:

1. FDI growth rate (FDI/Y) is lagged by one year on the assumption that, generally investment changes would not affect growth and savings immediately, but would do so in the following year.
2. The presence of negative observations in the data on such variables as FDI, gross domestic savings rate and interest rate partly justifies the use of both ratios and logs in the specification of the models. Thus, data on all other model variables except FDI, gross domestic savings rate and interest rate is processed in logs.
3. Foreign debt is included in the growth and savings equations as an additional explanatory variable. The rationale for this is that, to address the resource gap and finance growth, Zambia has for a long time been using external debt, which is actually another component of capital inflow from abroad.
4. Interest rate is also included as an addition explanatory variable in the models to measure the rate of return on savings and the opportunity cost of consumption. It is noteworthy that due to the financial repression paradigm under which Zambia has over time operated deposit rate is preferred because this is directly related to savings compared to other types of interest rates. Lending rates, for instance is inappropriate and this might even be collinear with investment

6.2.2 Growth equation

It is noteworthy that most of the empirical testing of the impact of FDI on economic growth is carried out using a conventional growth equation derived from a Cobb-Douglas production function (i.e. $Y = TK^{\alpha}L^{\beta}$). The equation relates real output (Y) at time t to the

resources used – being labour, capital and technology. α and β are the partial elasticities of output with respect to capital and labour respectively. The conventional growth equation relates output growth rate to investment rate (I/Y), the labour force growth rate ($\Delta L/L$) and technology (a), expressed as:

$$\text{Growth} = a + bI/Y + c\Delta L/L \quad (1)$$

To test the impact of foreign capital flow (FCI) on the Malaysian economic growth Wong with Jomo use a semi log specification of the conventional growth equation expressed as

$$\ln y = a + b_1S/Y + b_2FCI/Y + c\Delta L/L + dSC \quad (2)$$

Where: $b_1 =$ partial elasticity of output with respect to domestic savings rate

$b_2 =$ partial elasticity of output with respect to foreign capital inflows

The conventional growth equation is further transformed as follows:

1. The investment variable is substituted by its constituents of S/Y and FDI/Y . In the absence of government, the growth rate of national income will be directly or positively related to the savings ratio. That is, the more an economy was able to save and invest out of a given GNP/GDP, the greater would be the growth of that GNP/GDP.
2. Following a large number of empirical studies (Edwards, 1996; Feder, 1982 and Romer, 1986 to mention a few) that have supported the export-led hypothesis, we introduce exports as a variable in the growth equation. This is done because exports like FDI, can also result in a higher rate of technological innovation and dynamic learning from abroad.

Thus using the Ordinary Least Squares (OLS) method, the transformed growth equation is expressed as:

$$\begin{aligned} \text{Log}Y = & a_0 + \Sigma a_{1i}S/Y + \Sigma a_{2i}(FDI/Y)_{t-1} + \Sigma a_{3i}L/L + \Sigma a_{4i}\text{Log}(DEBT/Y) \\ & + \Sigma a_{5i}\text{Log}(CX/Y) + \Sigma a_{6i}\text{LogINT} + u_t \end{aligned} \quad (3)$$

Where $\text{Log}Y =$ GDP growth,

$S/Y =$ savings rate,

$FDI/Y =$ foreign direct investment as a proportion of GDP,

$L/L =$ labour force growth rate,

$\text{Log}(DEBT /Y) =$ log of foreign debt as a proportion of GDP,

$\text{Log}CX/Y) =$ log of exports as a proportion of GDP,

$\text{LogINT} =$ log of deposit interest rates,

$a_0 =$ constant,

$a_{1i}, a_{2i}, a_{3i}, a_{4i}, a_{5i},$ and $a_{6i} =$ partial elasticities of output with respect to the individual variables that they are attached to,

$t =$ current year,

$t-1 =$ denotes a one year lag of a variable, and

$u_t =$ stochastic error terms.

All explanatory variables are expected to carry positive signs and to be significant, which would suggest that the output growth rate is dependent on the savings rate, foreign direct investment, labourforce growth rate, foreign debt, exports and deposit interest rates. That is $(a_{1i}>0), (a_{2i}>0), (a_{3i}>0), (a_{4i}>0), (a_{5i}>0), (a_{6i}>0)$.

6.2.3 Savings equation

Overall savings, represented by gross domestic savings (GDS) is defined as the difference between income and consumption.

That is, $S = Y - C,$ (4)

where $S =$ gross domestic savings,

$Y =$ GDP,

$C =$ Consumption.

The savings rate is defined as S/Y , i.e. gross domestic savings scaled against GDP. The traditional Keynesian-type savings function can be augmented by variables like exports, per capita income, income growth rate, the population structure, foreign debt, interest rate, inflation and many other variables.

To test the effect of FCI on domestic savings Wong with Jomo use the following savings equation:

$$X4 = c + a_1 FCI/Y + a_2 CX + a_3 \ln y + a_4 \Delta L/L \quad (5)$$

Where: $X4 =$ gross domestic savings as a proportion of GDP,

$FCI/Y =$ foreign capital inflow as a proportion of GDP,

$CX =$ change in exports as a proportion of GDP,

$\ln y =$ real GDP growth,

$\Delta L/L =$ labour force growth rate as a proxy for change in the population structure.

Wong and Jong (op cit: p30) observe that,

Under the “life-cycle hypothesis” developed by Modigliani and Brumberg, the savings rate is a positive function of income growth rate. This hypothesis maintains that savings mainly result from a desire to provide for consumption in old age. By generating higher lifetime incomes, a growing economy can therefore be expected to have positive effects on savings. This hypothesis also expects changes in the structure of the population to affect the savings rate. This effect can be tested by using measures such as the population growth rate, the labour participation rate and others that may be used as proxies.”

Export performance is also expected to have a favourable influence on savings rate. Exports, especially of primary products, often result in highly concentrated incomes, and the standard savings theory suggests that the propensity to save from such income is high, Papanek (1972) in Wong with Jomo (Ibid: p30). Also, countries with good export performance tend to face fewer foreign exchange constraints on investment, and therefore tend to provide more of an incentive to save.

The savings equation is further transformed as follows:

1. To test the effect of FDI on domestic savings, most studies consulted included foreign capital inflow (FCI) as an additional explanatory variable, in properly specified savings functions¹⁶. FCI was thus inserted in the savings function as either an aggregated component or disaggregated in its constituents of FDI and DEBT. Any positive effect of FCI on the domestic savings rate will exert positive side effects on the investment rate. If an indirect effect exists, the orthodox

¹⁶ See Fry (1993): p15

treatment of FCI would expect benefits from such inflows to the recipient country. Similarly in this study, to test the impact of FDI on gross domestic savings in Zambia, FCI, in addition to the above-mentioned variables, will be inserted in the savings function in its disaggregated form.

Using OLS method the transformed Keynesian-type savings equation will be used and is expressed as:

$$S/Y = b_0 + \sum b_{1i}(FDI/Y)_{t-1} + \sum b_{2i}\text{Log}(DEBT/Y) + \sum b_{3i}\text{Log}(CX/Y) + \sum b_{4i}\text{Log}Y + \sum b_{5i}\text{Log}(L/L) + \sum b_{6i}\text{Log}INT + v_t \quad (6)$$

Where: S/Y = savings as proportion of GDP,

FDI/Y = foreign direct investment as a proportion of GDP,

$\text{Log}(DEBT/Y)$ = log of foreign debt as a proportion of GDP,

$\text{Log}(CX/Y)$ = log of exports as a proportion of GDP,

$\text{Log}Y$ = GDP growth,

$\text{Log}(L/L)$ = labour force growth rate as a proxy for change in the population structure,

$\text{Log}INT$ = log of deposit interest rate,

t = current year,

$t-1$ = denotes a one year lag of a variable, and

v_t = stochastic error terms,

b_0 = constant

$b_{1i}, b_{2i}, b_{3i}, b_{4i}, b_{5i}$ and b_{6i} = partial elasticities of savings with respect to the individual variables that they are attached to. The expected parameter signs are:

$(b_0 < 0)$ $(b_{1i} > 0)$ $(b_{2i} > 0)$ $(b_{3i} > 0)$ $(b_{4i} > 0)$ $(b_{5i} > 0)$, and $(b_{6i} > 0)$, and are expected to be significant, which would suggest that savings rate is dependent on foreign direct investment, foreign debt, exports, real GDP growth, labour force growth rate and deposit interest rate.

6.3 Time series properties

In order to analyse the behaviour of economic time series correctly, it is necessary to consider their underlying time series properties. Pindyck and Rubinfeld (1991, p443) postulate that, “as we begin to develop models for time series, it is important that we know whether or not the underlying process that generated the series can be assumed to be invariant with respect to time.” Non-stationarity of time series data has often been regarded as a problem in empirical analysis. Working with non-stationary variables leads to spurious regression results from which further inference is meaningless.

As coined by Granger and Newbold (1974), in Griffiths et al (1993:p696), “spurious regression” describes regression results involving economic time series, that “look good,” in the sense of having high R^2 values and significant t-statistics, but which, in fact, have no real meaning. Thus, the usual statistical properties of least squares hold only when the time series variables involved are stationary.

Since almost all economic series are non-stationary, it follows that these series have to be made stationary before any sensible regression analysis can be made. A convenient way of getting rid of non-stationarity in a series is differencing the series.” The first step is therefore to test for stationarity of the variables. In so doing the first step is to look at the plots and afterwards, we shall apply formal tests to try and detect the presence of unit roots in the time series. Among the alternative tests for unit root are Dickey-Fuller, Augmented Dickey Fuller (ADF), Said-Dickey, and Phillips-Perron. In this dissertation the ADF test is performed¹⁷.

6.4 Data collection

Data was largely obtained from published sources, such as, the World Development Indicators and Africa Development Indicators, Yearbooks (World Bank); International Financial Statistics, Yearbooks (IMF); World Investment Reports, United Nations Conference on Trade and Development (UNCTAD). In addition to these sources the National Accounts Statistical Bulletins, Central Statistics Office (CSO); Annual reports, Bank of Zambia (BOZ); Economic reports, Ministry of Finance and Economic Development (MOFED); and Institutional and Enterprise survey reports, Zambia Investment Centre (ZIC) were used. The above mentioned sources were complemented with qualitative insights, derived from interviews with key officials in both government and private sectors, such as the (ZIC), (BOZ), (MOFED), Export Board of Zambia (EBZ), and others. This largely assisted to refine secondary data estimates, especially in cases where only preliminary and provisional estimates were available.

¹⁷ This is the most commonly used unit root test in empirical research. However, its limitations are also acknowledged.

Annual estimates for all the variables were covered. That is net FDI, real GDP, real GDP growth rate, real GDP per capita, external debt stock, gross domestic savings, BOP balances, deposit interest rates, labourforce growth rate, population structure, exports, rate of inflation and foreign exchange rate.

CHAPTER 7

RESULTS AND INTERPRETATIONS

7.1 Unit Root Test Results

The presence of unit roots is tested with the Augmented Dickey-Fuller (ADF) test, which is formulated as:

$$\Delta X_t = \alpha_0 + \alpha_1 T + \delta X_{i(t-1)} + \sum_{i=1}^k \beta_{it} \Delta X_{i(t-1)} + u_t \quad (7)$$

Where Δ is the first difference operator, X is the time series variable, T is the time trend, α and β are the coefficients, k is the number of lags in the independent variable, chosen to induce a white noise term and u is the stochastic error term. The constant or trend may be excluded from the ADF model and was in this study excluded. The null hypothesis is that there is a unit root. Thus, the null hypothesis that variable X_t is non-stationary is $H_0 : X_t \sim I(1)$. The results of the ADF-test as summarized in table 7.1 show that time series data of all variables except savings rate and labourforce growth rate appear to have a unit root in their levels and are thus non-stationary. However, they were found to be stationary after differencing them once. Thus, empirically these variables appear to be integrated of order one (I~I(1)). A graphical analysis of these variables in their levels showed non-stationarity

(See appendices 7 to 9) and therefore the null hypothesis of non-stationarity cannot be rejected. The occurrence of unit roots in the level data gives an indication of shocks having permanent or long lasting effects.

Table 7.1: Unit Root test statistics

Augumented Dickey-Fuller test

Variable	Level	First difference	Order of integration
S/Y	-2.5537*		I(0)
L/L	-4.6311**		I(0)
LogY	2.1001	-5.1495**	I(1)
Log(DEBT/Y)	1.3153	-3.4105**	I(1)
Log(CX/Y)	-0.3779	-6.4222**	I(1)
LogINT	1.5617	-3.5731**	I(1)
(FDI/Y) _{t-1}	-1.6708	-7.9583**	I(1)

Critical values: 5% = -1.955, 1% = -2.656

- * and** indicate significance at 5% and 1% respectively

Having found the order of integration the next step was to establish whether these are cointegrated or not. Cointegration necessitates that the variables are integrated of the same order, and if all the variables are stationary in the first difference, then the ADF-test gives the results that the variables are I(1). In this or in a case that variables are integrated of the same order, it is reasonable to go on in testing the cointegration.

7.2 Cointegration Test

The concept of cointegration implies that if there is a long-run relationship between two or more non-stationary variables, deviations from this long-run path are stationary. To establish this, the Engle-Granger (EG) two-step procedure was used. Engle and Granger (1987) observe that even though economic time series may wander through time, that is, may have the characteristic of non-stationarity in the level, there may exist some linear combination of these variables that converges to a long run relationship over time. If the series individually are stationary after differencing but one finds that a linear combination of their levels is stationary, then the series are said to be cointegrated.

To perform the EG two step cointegration test, the first step is to perform the ordinary least squares (OLS) estimation and obtain the long run relationship among the variables in both the growth and savings equations. Thus, we estimate the static models of the following form:

$$Y_t = \alpha_0 + \sum_{i=1}^k \alpha_{i1} X_{it} + u_t \quad (8)$$

Where, Y_t is the response variable, which in this study specifically denotes economic growth and gross domestic savings. X_t are the explanatory variables and u_t are the stochastic error terms in the two models. It is noteworthy that cointegration is not affected by which variable is the dependent variable.

7.2.1. Engle-Granger (EG) Cointegration test –Growth model

The solved static long run equation is expressed as:

$$\begin{aligned} \text{Log}Y = & 8.19 - 0.008073S/Y + 0.002718 L/L - 0.22 \text{Log}(DEBT/Y) \\ & + 0.05526 \text{Log}(CX/Y) + 0.2265 \text{Log}INT + 0.00869(FDI/Y)_{-1} \end{aligned} \quad (9)$$

In the second step of the EG procedure the stationarity of the residuals obtained from equation 7 was tested by applying the ADF test at level. The order of integration was thus established. The null hypothesis is $H_0: \Delta\varepsilon_t \sim I(0)$ and so $\varepsilon_t \sim I(1)$ for the acceptance of no cointegration, against $H_a: \varepsilon_t \sim I(0)$ for the rejection of no cointegration. The results of the EG test for cointegration are given in table 7.2.

Table 7.2: Residual stationarity test – Growth model

ADF Test

Variable	t-ADF	t-lag	Order of cointegration
ε_t	-4.5978**	0	I(0)
ε_t	-5.2229**	1	I(0)
ε_t	-3.3863**	2	I(0)

- ε_t = Residual

- * and** indicate significance at 5% and 1% respectively

- Critical values: 5%=-1.954, 1%=-2.652

As can be seen from table 7.2 the residuals in the growth model were found to be stationary at 1% level of significance. This suggests the rejection of the hypothesis of no cointegration, which also implies that there exists a long-run (cointegration) relationship

between real economic growth and the explanatory variables captured by the error correction term (ECT). This result qualifies the interpretation of the coefficients in the static regression as long-run multipliers.

Having established this cointegrating relationship, we determine the short run dynamic of the system by estimating an error correction model (ECM) of the form:

$$\begin{aligned} \Delta \log Y_t = & \alpha_0 + \sum_{i=1}^k \beta_i \Delta \log Y_{t-i} + \sum_{i=0}^k \gamma_i (S/Y)_{t-i} + \sum_{i=0}^k \varepsilon_i \log(L/L)_{t-i} + \sum_{i=0}^k \eta_i \Delta \log(DEBT/Y)_{t-i} + \\ & \sum_{i=0}^k \theta_i \Delta \log(CX/Y)_{t-i} + \sum_{i=0}^k \lambda_i \Delta \log INT_{t-i} + \sum_{i=1}^k \delta_i \Delta (FDI/Y)_{t-i} + \mu_1 ECT_{t-1}, \end{aligned} \quad (10)$$

where all the variables are as defined earlier in the preceding chapter,

$\alpha_0, \beta_i, \gamma_i, \varepsilon_i, \eta_i, \theta_i, \lambda_i, \delta_i,$ and μ_1 = the constant and the coefficients of the variables,

$t-i$ = yearly time lag,

Δ = difference operator,

k = lag length,

ECT is the error correction term obtained from equation 9.

The error correction model (ECM) obtained by the inclusion of the ECT incorporates both the short run and long run effects on economic growth. The small sample size and the use of annual data, limits the number of lags to include for each variable in the ECM. However, this limited sample sufficiently represents Zambia's post independence period. Thus, to preserve the degrees of freedom only one lag for each variable is included.

Using the notion of general to specific modelling we estimate a few ECMs in order of their significance, to obtain a parsimonious model.

The ECM theory predicts that the error-correction term must be negative and significantly different from zero. The coefficient of the ECT is an estimate of the speed of adjustment back to the long-run equilibrium relationship.

7.2.2. Engle-Granger (EG) Cointegration test –Savings model

Similarly, for the savings model we apply the EG two step procedure that has been applied in the estimation of the above growth model. The solved static long run equation is expressed as:

$$S/Y = 344.9 + 0.6433 (FDI/Y)_1 - 17.55 \text{Log}(DEBT/Y) + 6.403 \text{Log}(CX/Y) - 36.78 \text{Log}Y + 0.4784 L/L + 8.414 \text{Log}INT \quad (11)$$

The results of the second step of the EG procedure obtained from equation 11 are summarized in table 7.3. The residuals in the savings model were found to be stationary at 1% level of significance (see table 7.3), which shows evidence of a cointegrating relationship between gross domestic savings and the explanatory variables. This result qualifies the interpretation of the coefficients in the static regression as long-run multipliers.

Table 7.3: Residual stationarity test – Savings model

<i>ADF Test</i>			
Variable	t-ADF	t-lag	Order of integration
μ_t	-2.9652**	0	I(1)
μ_t	-3.5205**	1	I(1)
μ_t	-4.7205**	2	I(1)

- μ_t = Residual

* and** indicate significance at 5% and 1% respectively

Critical values: 5%=-1.954, 1%=-2.652

Thus, the ECM to be estimated is of the form:

$$\begin{aligned}
 (S/Y)_t = & \sigma_0 + \sum_{i=1}^k v_i (S/Y)_{t-i} + \sum_{i=0}^k \phi_i \log(L/L)_{t-i} + \sum_{i=0}^k \chi_i \Delta \log(DEBT/Y)_{t-i} + \sum_{i=0}^k \psi_i \Delta \log(CX/Y)_{t-i} \\
 & + \sum_{i=0}^k \omega_i \Delta \log Y_{t-i} + \sum_{i=0}^k \Phi_i \Delta \log INT_{t-i} + \sum_{i=1}^k \rho_i \Delta (FDI/Y)_{t-i} + \Omega_1 ECT_{t-i}
 \end{aligned} \quad (12)$$

where all the other variables are as defined in the preceding chapter,

σ_0 , v_i , ϕ_i , χ_i , ψ_i , ω_i , Φ_i , ρ_i , and Ω_1 = the constant and coefficients of the variables in the model,

t-i = yearly time lag,

Δ = difference operator,

k = lag length,

ECT is the error correction term obtained from equation 11.

Similarly, a parsimonious model was obtained by employing a reduction process of eliminating variables in their order of insignificance, one or two at a time.

7.3 Regression Results

The regression results reported in tables 7.4 through to 7.7 include the explanatory variable coefficients, standard errors (Std Error), t-values, t-probabilities, the squared partial correlation (PartR²), the squared multiple correlation or overall explanatory power of the regression equation (R²) and F-test, the standard error of the equation (SE), and the residual sum of squares (RSS). Further, the diagnostic statistics reported test against several alternative hypotheses, namely residual autocorrelation (DW and AR), Excess Kurtosis (Normality) for the distribution of the residuals, χ^2 , autoregressive conditional heteroscedasticity (ARCH), χ^2 and the misspecification test of the regression model (RESET). These tests are carried out to find out whether the models are reliable or not.

7.3.1 Regression results of the growth model

The regression results obtained from equation 10 are summarized in table 7.4. As can be seen from table 7.4 not all variable coefficients carry the expected signs and the diagnostic tests are not significant. The model statistics also show significantly high values of R² and F-statistic, which suggests that the overall explanatory power of the model is sufficiently high.

As earlier suggested the reduction process of eliminating the least significant variables is employed until a parsimonious model is obtained. The regression results of the general model and those of the parsimonious model are summarized in tables 7.4 and 7.5 respectively, while the other parts of the notion of general to specific modelling are shown in appendices 11 to 14.

Table 7.4: General ECM regression results – growth model

Variable	Coefficient	Std. Error	t-value	t-prob	PartR ²
Constant	0.016064	0.010521	1.527	0.1491	0.1427
$\Delta \log Y_{-1}$	-0.10903	0.16740	-0.651	0.5254	0.0294
S/Y	-0.0025392	0.0012973	-1.957	0.0706	0.2149
S/Y ₋₁	0.0036217	0.0011306	3.203	0.0064	0.4229
L/L	-0.0017598	0.0031838	-0.553	0.5892	0.0214
L/L ₋₁	-0.0030558	0.0029435	-1.038	0.3168	0.0715
$\Delta \log(\text{DEBT}/Y)$	-0.23186	0.055277	-4.195	0.0009	0.5569
$\Delta \log(\text{DEBT}/Y)_{-1}$	-0.020108	0.070039	-0.287	0.7782	0.0059
$\Delta \log(\text{CX}/Y)$	0.013977	0.031854	0.439	0.6675	0.0136
$\Delta \log(\text{CX}/Y)_{-1}$	0.032864	0.025181	1.305	0.2129	0.1085
$\Delta \log \text{INT}$	0.013105	0.026664	0.492	0.6307	0.0170
$\Delta \log \text{INT}_{-1}$	-0.032389	0.045987	-0.704	0.4928	0.0342
$\Delta(\text{FDI}/Y)_{-1}$	0.0031146	0.0021426	1.454	0.1681	0.1311
ECT ₋₁	-0.68308	0.20566	-3.321	0.0050	0.4407
DM1991	0.12430	0.041474	2.997	0.0096	0.3908

$R^2 = 0.933529$ $F(14, 14) = 14.044$ [0.0000] $\sigma = 0.0243533$ $DW = 2.15$

RSS = 0.008303161476 for 15 variables and 29 observations

AR 1- 2F(2, 12) = 0.18389 [0.8343]

ARCH 1 F(1, 12) = 0.010821 [0.9189]

Normality $\chi^2(2) = 0.61635$ [0.7348]

RESET F(1, 13) = 0.26295 [0.6167]

Δ = first difference operator; DM = Dummy variable

Using one step Chow test the model was tested for structural stability by Recursive Least Squares (RLS). The model exhibited instability, so an impulse dummy for 1991 was

added after critical analysis of residuals, which showed a shock to the system during that year. This year represents the period that saw a total shift from the previous closed one party state-led growth strategies to more open and market friendly multi-party state-led economic management.

The results obtained from the parsimonious model are summarized in table 7.5.

Table 7.5: Regression results of the parsimonious growth model

Variable	Coefficient	Std. Error	t-value	t-prob	PartR ²
Constant	0.017615	0.0081493	2.162	0.0424	0.1820
S/Y	-0.0018310	0.00077938	-2.349	0.0287	0.2081
S/Y ₋₁	0.0024997	0.00076071	3.286	0.0035	0.3396
$\Delta\log(\text{DEBT}/Y)$	-0.21814	0.041711	-5.230	0.0000	0.5657
$\Delta(\text{FDI}/Y)_{-1}$	0.0029305	0.0012823	2.285	0.0328	0.1992
$\Delta\log(\text{CX}/Y)_{-1}$	0.032664	0.019855	1.645	0.1148	0.1142
ECM ₋₁	-0.55544	0.10069	-5.516	0.0000	0.5917
DM1991	0.12701	0.029975	4.237	0.0004	0.4609

$R^2 = 0.91518$ $F(7, 21) = 32.369$ [0.0000] $\sigma = 0.0224618$ $DW = 2.39$

RSS = 0.01059515327 for 8 variables and 29 observations

AR 1- 2F(2, 19) = 0.6975 [0.5101]

ARCH 1 F(1, 19) = 0.14294 [0.7096]

Normality Chi²(2) = 1.2061 [0.5471]

Xi² F(13, 7) = 0.24368 [0.9864]

RESET F(1, 20) = 0.64527 [0.4313]

Δ = first difference operator; DM = Dummy variable

As can be seen from table 7.5 the diagnostic test results appear to be satisfactory – that is, there is no problem with either serial correlation or heteroscedasticity. Normality test for the distribution of the residuals and the RESET test for the specification of the regression model all show satisfactory results.

In addition, table 7.5 shows that except for current savings and DEBT, all variables including the error correction term (ECT) carry the expected signs and all t-values are statistically significant. An exception to this is the constant, but this is kept as it is to avoid further problems. The R^2 with a value of 0.91518 is still significantly high and the F-value of 32.369 is much larger than the F-critical $F(7,21)$ which is about 2.49 and hence the model as a whole has enough explanatory power. So, this is the model that will be used to test the impact of FDI on economic growth in Zambia.

The lagged ECT included in the model to capture the long-run dynamics between the cointegrating series is correctly signed (negative) and its coefficient is statistically significant as exhibited by the t-value of -5.516. Thus, the model reports a modest speed of adjustment of around 56%. This implies that the discrepancy between the actual and the long-run or equilibrium value of real growth rate is eliminated or corrected for in each year.

Table 7.5 shows that unlike past gross domestic savings (GDS), current GDS has an opposite result to the hypothesis. This is understandably so because, as earlier pointed out GDS in Zambia has for a long time been low. On the other hand, this result could be

linked largely to Zambia's debt service obligation. According to BOZ (2000: p29), *as a ratio of GDP, Zambia's external debt payments in 1998, 1999 and 2000 were 5.6%, 6.4% and 5.8% respectively*, whereas during the period the ratios of gross domestic savings to GDP were respectively 3.9%, -0.9% and 3.1% (see appendix 1 and 10). This problem is compounded by consumption in unproductive sectors, as evidenced among other things, by subsidies alluded to in the preceding chapters.

Foreign borrowing can help relieve resource shortages and if utilised to finance productive investment activities can in turn stimulate economic growth. Contrary to this view table 7.5 shows that external debt had a negative impact on economic growth in Zambia. In addition, as indicated by the negative coefficient (-0.21814) external debt had depressing effects growth. Thus, Zambia should give considerations for other growth determinants and certainly not external debt. Exports as postulated by the export-led growth theorists impacts positively on growth in Zambia. Thus, according to the table every one percent rise in exports led to about 0.033 percent rise in economic growth.

Most important to note in the above regression results is the relationship between FDI and economic growth. The results show that FDI in Zambia was positively related to economic growth. This result is also consistent with the conventional school of thought though the low coefficient of 0.0029305 shows that FDI in Zambia was statistically insignificant. This implies that every one percent increase in FDI led to about 0.003 percent appreciation in economic growth.

7.3.2. Regression results of the savings model

The regression results obtained from equation 12 are summarized in table 7.6. The table shows that not all coefficients carry the expected signs and not all t-values are individually significantly different from zero. However, test statistics show significantly high values of R^2 and F-statistic, which suggests that the overall explanatory power of the model is sufficiently high. The diagnostic test results appear to be satisfactory – that is, AR for autocorrelated residuals, the ARCH for heteroscedastic errors, normality test for the distribution of the residuals and the RESET test for the specification of the regression model.

Similarly, the reduction process of eliminating the least significant variables is employed until a parsimonious model is obtained. The regression results of the general model and those of the parsimonious model are summarized in tables 7.6 and 7.7 respectively, while the other parts of the notion of general to specific modelling are shown in appendices 15 to 19.

Table 7.6: General ECM regression results – savings model

Variable	Coefficient	Std. Error	t-value	t-prob	PartR ²
Constant	0.37752	1.9431	0.194	0.8486	0.0025
S/Y ₋₁	0.78834	0.14154	5.570	0.0001	0.6741
ΔFDI/Y ₋₁	0.97743	0.32431	3.014	0.0087	0.3772
Δlog(DEBT/Y)	2.9187	13.960	0.209	0.8372	0.0029
Δlog(DEBT/Y) ₋₁	9.1593	11.646	0.787	0.4438	0.0396
Δlog(CX/Y)	17.870	4.5142	3.959	0.0013	0.5109
Δlog(CX/Y) ₋₁	-3.1769	4.9659	-0.640	0.5320	0.0266
ΔLogY	5.3746	29.053	0.185	0.8557	0.0023
ΔLogY ₋₁	26.877	28.797	0.933	0.3654	0.0549
L/L	0.68979	0.57577	1.198	0.2495	0.0873
L/L ₋₁	0.082203	0.47329	0.174	0.8644	0.0020
ΔLogINT	2.1197	3.0661	0.691	0.4999	0.0309
ΔLogINT ₋₁	3.5189	3.5281	0.997	0.3344	0.0622
ECT ₋₁	-0.78106	0.25639	-3.046	0.0082	0.3822

$R^2 = 0.918835$ $F(13, 15) = 13.062$ [0.0000] $\sigma = 4.5707$ $DW = 2.08$

g RSS = 313.3699411 for 14 variables and 29 observations

AR 1- 2F(2, 13) = 0.13584 [0.8742]

ARCH 1 F(1, 13) = 0.0075196 [0.9322]

Normality $\text{Chi}^2(2) = 3.5902$ [0.1661]

RESET F(1, 14) = 2.5257 [0.1343]

$\Delta =$ first difference operator

As can be seen from table 7.7 all variables including the error correction term (ECT) carry the expected signs and all t-values are statistically significant. The R^2 with a value

of 0.892312 is still significantly high and the F-value of 49.716 is much larger than the F-critical $F(4,24)$ which is about 2.78 and hence the model as a whole has enough explanatory power. So, this is the model that will be used to test the impact of FDI on gross domestic savings in Zambia.

Table 7.7: Regression results of the parsimonious savings model

Variable	Coefficient	Std. Error	t-value	t-prob	PartR ²
Constant	0.11870	1.4796	0.080	0.9367	0.0003
S/Y ₋₁	0.91337	0.074719	12.224	0.0000	0.8616
Δ FDI/Y ₋₁	0.76745	0.21275	3.607	0.0014	0.3516
Δ log(CX/Y)	18.517	3.2673	5.667	0.0000	0.5723
ECT ₋₁	-0.89880	0.17611	-5.104	0.0000	0.5205

$$R^2 = 0.892312 \quad F(4, 24) = 49.716 [0.0000] \quad \sigma = 4.16221 \quad DW = 1.67$$

RSS = 415.7765423 for 5 variables and 29 observations

$$AR\ 1-2F(2, 22) = 0.55131 [0.5840]$$

$$ARCH\ 1\ F(1, 22) = 0.27002 [0.6085]$$

$$Normality\ Chi^2(2) = 0.38037 [0.8268]$$

$$Xi^2\ F(8, 15) = 0.27527 [0.9644]$$

$$Xi * Xj\ F(14, 9) = 0.1956 [0.9966]$$

$$RESET\ F(1, 23) = 1.5727 [0.2224]$$

Δ = first difference operator

The lagged ECT included in the model to capture the long-run dynamics between the cointegrating series is correctly signed (negative) and its coefficient is statistically significant. Thus, the model reports a speed of adjustment of around 90%, which is very

high. This implies that the discrepancy between the actual and the long-run or equilibrium value of savings rate is eliminated or corrected for in each year.

The regression results in table 7.7 show that exports, with the coefficients of 18.517 explained the largest part of the variations in gross domestic savings. This suggests that each one percent increase in exports led to about 18.5% increase in gross domestic savings. This result is consistent with the “export-led hypothesis” that was discussed earlier¹⁸. For Zambia this result could largely be attributed to the export of such primary product as copper, which has for long time been the main foreign exchange earner. The results also show that despite having a low coefficient, past savings had a positive effect on current savings.

In this study our variable of interest is FDI/Y. The regression results show that foreign direct investment (FDI) with a t-value of 3.607 is statistically significant in explaining the variations in gross domestic savings. The coefficient of FDI of 0.76745 suggests that each one per cent increase in FDI rate lead to about 0.8 per cent increase in gross domestic savings in Zambia. The findings suggest to reject the hypothesis that foreign direct investment has had depressing effects on gross domestic savings, and thus the findings are consistent with the orthodox view that FDI has a positive influence on the savings rate in Zambia.

¹⁸ See Wong with Jomo (op cit: p30)

7.4 Limitations of the study results

It is not possible to construct a perfect econometric model. Any science that depends on people's behaviour as well as complex interrelationships between variables is marred by uncertainties and error margins. Considering this, every econometric model is a compromise. However, any model should be easy to use and interpret. In addition, it should be capable of describing the reality and being able to forecast behaviour with reasonable accuracy.

Thus, the first limitation worth conceding relates to the accuracy of data compiled which may bias the results. For instances, though not to a large extent, some variables, from the same data sources had two different estimates, for the same year. Therefore, a statistical tool of splicing of index had to be applied in order to arrive at one representative figure. In the same context, another limitation worth conceding is that of proxying of some variables, such as labour participation rate, which may have not been conclusive.

Secondly, the methodology used in this study would have worked much better with more observations. There are 31 observations before differencing. This is particularly due to the difficulties encountered in collecting data on FDI especially for the periods outside the sample, particularly 1964-1970. However, the results show some consistency with a number of findings in other previous, but similar studies which suggests that any bias in the results are minimal.

Thirdly, literature review, and the preceding sub-section have briefly discussed the other effects of FDI on the host countries. The fact that this study is largely quantitative, and mainly focuses only on economic growth, and on gross domestic savings is by no means a failure to acknowledge the importance of the effects of the other economic variables.

CHAPTER 8

CONCLUSIONS AND RECOMMENDATIONS

In terms of long-term foreign capital, Zambia has for a long time resorted to inflows of foreign direct investment (FDI) and external debt to finance growth. However, the importance and impact of each one these two sources of financing have varied over time and have often been overwhelmed by prevailing policies. The findings of this study are that, of the two forms of external finance FDI was a better growth strategy than debt. Thus, FDI in Zambia has stimulated at least some growth in income that would almost surely not have been realized in the absence of this investment.

FDI has continued to play a significant role in the Zambian economy. This is especially obvious in the mining industry. In addition to creating jobs and generating exports, the foreign multinationals have also contributed to the technical capabilities of the locals. This is through the process of technology transfer. The main process by which this takes place is via the linkages established between the multinationals and the locally owned suppliers and via the process of developing the skills of Zambians working in the multinationals. The setting up of locally owned companies, such as Next technology and

Computer Warehouse, that are performing computer assembly activities and other back-up services that were previously undertaken by foreign multinationals, like the International Business Machines (IBM) and National Cash register (NCR) is a very strong proof of the process of technology transfer. Other examples of technology transfer can be seen in the establishment of woodwork firms like Kitchen Designers, from which have sprung a number of self-employed Carpenters, managing similar high technology wood works.

FDI has been an important source of financing for the Zambian economy as it has helped to cover the current account deficit, fiscal deficit (in case of privatisation-related FDI, such as the ones in the mines, Chilanga Cement Plc, Zambia Sugar company Plc to mention a few), and has also supplemented inadequate domestic resources to finance both ownership change and capital formation. As discussed in the above paragraph, compared with other financing options such as debt (both local and foreign) FDI has been quite instrumental in facilitating transfer of technology, know-how and skills, and has in some cases helped local enterprises to expand into foreign markets. Agri Flora in the agricultural sector is one such example.

Note should be taken that while Zambia has benefited from FDI, such inflows have also had negative implications on the domestic economy. These negative implications on the Zambian economy could in addition to the generous investment incentives enshrined in the Investment Act of 1993, be explained in relation to some of the preconditions for ensuring successful use of FDI as postulated by Ghazali (1996) in UNDP (1999): p128-

129 (ibid)¹⁹. Some of these pre-conditions are:

1. The factor payment cost must be minimised and prudently managed.
2. To enhance positive trade effects, FDI must be concentrated in the tradable sector, especially in export-based activities.
3. Encourage or require joint ventures so that part of the returns accrue to the locals and is retained by the local economy.
4. Get foreign firms to list themselves on local bourses.
5. Moffat's rule should be adhered to (growth of domestic investment should exceed FDI Growth).
6. To avoid reliance on foreign capital, developing countries should increase their savings rate and maintain sound economic and political conditions.

The structure and pattern of FDI in Zambia show that most of the above mentioned pre-conditions were not met. For instance, most FDI was either local market seeking or resource seeking and was thus not concentrated in export-based activities. Most FDI that was concentrated in the tradable sector dealt in foreign finished goods that required a high capital flight to bring them into the country. In addition, most foreign firms are not listed on local bourses and thus participation of the locals has been very minimal. Zambia offers an investment incentive of 100% profit repatriation²⁰ to foreign firms. This form of FDI may bring about adverse BOP impact if the dividend and royalty repatriation exceeds inflow of capital; loss of tax revenue through the use of transfer pricing to reduce

¹⁹ Refer to literature review, page 55.

²⁰ See appendix 6 - investment incentives

declared profits especially that nothing accrues to the locals; impaired development of local firms through direct competition and abuse of market power.

The net contribution of domestic savings to economic growth has been found not to be statistically different from that of FDI, suggesting that the Zambian government should stress mobilizing domestic resources than rely on FDI and external debt.

It is also recommended that rather than looking at FDI as a block growth instrument, research on the individual operations and contributions of all foreign affiliates should be encouraged. It is envisaged that this would minimize unofficial flight of capital that is supposed to accrue to the domestic economy. To effectively achieve this, it is further recommended that legislation to mandate all foreign affiliates to register under one government agency such as the Zambia Investment Centre (ZIC) should be put in place. The research found that currently, FDI is captured separately by ZIC, the Zambia Privatization Agency (ZPA), the Ministry of Finance and Economic Development (MOFED), while others are simply registered under the Registrar of Companies.

The general message from our study and empirical findings is that from the viewpoint of attracting FDI into Zambia, offering investment incentives is just a necessary but not sufficient condition. It is noteworthy that macroeconomic and political stability are more important. The government can offer as many incentives as possible but if this is not supported by macroeconomic and political stability rational investors will not be attracted to Zambia. The ones who ultimately come will always remain elusive due to the unstable

environment. Thus, good governance, building an effective institutional and legal framework, and eliminating corruption in bureaucratic institutions is very important. These factors once overlooked may lead to loss of investor confidence and hence less returns from FDI.

BIBLIOGRAPHY

- Agrawal, P. (2000), "Economic Impact of Foreign Direct Investment in South Asia." Indira Gandhi Institute of Development Research, India.
- Aitken, Brian J. and Ann, E. Harrison (1999), "Do domestic firms benefit from Direct Foreign Investment? Evidence from Venezuela." The American Economic Review, 89/3: 605 – 618.
- Bachmann, H.B. (1991), "Industrialized Countries Policies affecting FDI in Developing Countries" Volume 1: PAS Research Paper Series. Washington, D.C. World Bank.
- Bachmann, H.B. (1996), "Implementing deregulation & Promoting FDI in Africa." Investment Marketing Paper Series, Washington, D.C. World Bank.
- Balasa, B. (1978), "Exports economic growth: Further evidence", Journal of Development Economics, 5, 181-189.
- Balasubramanyam, V. N., Salisu, M., and Sapsoford, D. (1996), "Foreign Direct Investment and Growth in EP and IS Countries." The Economic Journal, 106 (January), 92-105.
- BOZ (2000), Annual report, Lusaka, Zambia.
- Blinder, A.S. and Stiglitz, J.E. (1983), "Money, Credit constraints and Economic Activity", American Economic Review, Vol. 73, 297-302.
- Blomstrom, M., Lipsey, R. and Zejan, M. (1992), "What explains developing country Growth?" NBER working paper No. 4132, Cambridge, Mass.
- Blomstrom, M. and Kokko, A. (1997), "Regional Integration and Foreign Direct Investment – A Conceptual Framework and Three Cases." The World Bank, April.
- Borensztein, E., De Gregorio, J. and Lee, J. W. (1998), "How does Foreign Direct Investment affect economic growth?" International Journal of Economics, 45, 115-135.
- Carkovic, M. and Levine, R. (2002), "Does Foreign Direct Investment Accelerate Economic Growth?" University of Minnesota, Minneapolis.
- Charemza, W. W., and Deadman, D. F., (1997), "New Directions in Econometric Practice: General to Specific Modelling, Cointegration and Autoregression." Edward Elgar, United Kingdom.

- Chenery, H.B. and Strout, A. (1966), "Foreign Assistance and Economic Development." American Economic Review, 45, September: 675-733.
- Cuadros, A., Orts, V. and Alguacil, M.T. (2001), "Openness and Growth: Re-Examining FDI, Trade and Output Linkages in Latin America," Credit Research Paper, No. 01/04, Center for Research in Development and International Trade, University of Nottingham.
- C.S.O., National Accounts Statistical Bulletins Nos. 2, 3, 5, and 7.
- De Gregorio, J. (1992), "Economic growth in Latin America." Journal of Development Economics, 39, 59-84.
- De Mello, Jr., and Luiz, R. (1997), "Foreign direct investment in developing countries and growth: A selected survey." Journal of Development Studies, 34, No.1, 1-34, October.
- De Mello (1999), "Foreign Direct Investment led growth: Evidence from time-series And panel data." Oxford Economic Papers, No. 51.
- Djankov, S. and Hoekman, B. (2000), "Foreign Investment and Productivity Growth in Czeck Enterprises." The World Bank Economic Review, No.1, Vol. 14, January.
- Edwards, S. (1996), "Why are Latin America's savings rates so low? An International Comparative Analysis." Journal of Development Economics, Vol. 51, 5-44.
- Engle, Robert F. and Granger, C.W.J. (1987), Cointegration and Error Correction: Representation, Estimation and Testing, Econometrica 55 (2): 251-76.
- Feder, G. (1982), "On Exports and Economic Growth." Journal of Development Economics, Vol. 12, 59-73.
- Findlay, R. (1978), "Relative backwardness, Direct Foreign Investment, and the transfer of technology: A simple dynamic model." Quarterly Journal of Economics, 92, 1-16.
- Fry, M.J. (1993), "Foreign direct investment in a macroeconomic framework-finance, Efficiency, incentives, and distortions." International economics Department, World Bank.
- Gibbon, P. (1999) "Privatization and Foreign Direct Investment in Mainland Tanzania 1992-98." Centre for Development Research Working Paper, 99.1, Denmark.

- Graham, E and Edward, H (1995), "FDI in the World economy." IMF working paper, WP/95/59. Washington, D.C., International Monetary Fund.
- Griffths, W. E., Hill, R. C. and Judge, G. G. (1993), "Learning and Practicing Econometrics." John Wiley & Sons, INC. Singapore.
- Gujarati, D. (1995) "Basic Econometrics." Singapore: McGraw-Hill.
- GRZ (1968), "Zambia's Economic Revolution." Lusaka, Zambia.
- GRZ (1995), Economic Report, 1995. Lusaka, Zambia.
- GRZ (1997), "Evolution of Poverty." Lusaka, Zambia.
- GRZ (1997), Economic Report, 1997. Lusaka, Zambia.
- GRZ (1998), Economic Report, 1998. Lusaka, Zambia.
- GRZ (2000), Economic Report, 2000. Lusaka, Zambia.
- GRZ (2001), Economic Report, 2001. Lusaka, Zambia.
- GRZ (2000), "Public Investment Program 2000-2002." Lusaka, Zambia.
- GRZ (2002), "Poverty Reduction Strategy Paper 2002-2004." Lusaka, Zambia.
- Haddad, M. and Harrison, A. (1993), " Are there positive spillovers from direct foreign Investment? Evidence from panel data for Morocco." Journal of Development Economics, 42, 51-74.
- Hall, R. and Jones, C. (1999), " Why do some countries produce so much more capital per worker than others?" Quarterly Journal of Economics, 114, 83-116.
- IFC (1997), "Foreign Direct Investment: Lessons of Experience." Washington, D.C. USA.
- IMF (1992), "International Financial Statistics, Yearbook" Washington, D.C., USA.
- IMF (1992), "Report on the Measurement of International Capital Flows." Washington, D.C., USA.
- IMF (1993), "International Financial Statistics, Yearbook" Washington, D.C., USA.

- IMF (1994), "International Financial Statistics, Yearbook"
Washington, D.C., USA.
- IMF (1995), "International Financial Statistics, Yearbook"
Washington, D.C., USA.
- IMF (2000), "International Financial Statistics, Yearbook"
Washington, D.C., USA.
- IMF (2002), "International Financial Statistics, Yearbook"
Washington, D.C., USA.
- Ismail, M.N. (2001), "Foreign Direct Investment and Development: The Malaysian Electronic Sector." Chr Michelsen Institute, Working Paper No. 4, Norway.
- Jansen, K. (1993), "Direct Foreign Investment and Adjustment, the Case of Thailand." Working Paper No. 49, Institute of Social Studies, Netherlands.
- Jong, N.D and Vos, R (1994)a, "Theoretical and Empirical Approaches to Foreign Direct Investment: A Survey of Literature." Working Papers No. 57, Institute of Social Studies, Netherlands.
- Jong, N.D and Vos, R (1994)b, "What is measured in Studies on the Determinants of DFI." Institute of Social Studies Working Paper No.55, Netherlands.
- Kaminski, B. and Riboud, M. (2000), "Foreign Investment and Restructuring – the Evidence for Hungary." World Bank Technical paper No. 453, Washington, D.C.
- Klein, M., Aaron, C., Hadjimichael, B. (2001), "Foreign Direct Investment and Poverty Reduction." Policy Research Working Paper No. 613 Washington, D.C., World Bank.
- Layton, A.P. and Makin, T. (1993), "Estimates of the Macroeconomic Impact of Foreign Investment in Australia." International Economic Journal, 7, No.4.
- Lensink, R. and Morrissey, O. (2000), "Aid instability as a measure of Uncertainty And the Positive Impact of Aid on Growth." Journal of Development Studies, 36, 31-49.
- Markusen, J. (1998), "Trade versus Investment Liberalisation." NBER working paper No. 6231.

- Meier, G.M. (1995), "Private Foreign Investment in Developing Countries Policy Perspectives." International Centre for Economic Growth, Occasional Paper No. 59. ICS Press, San Francisco, California.
- Miller, R. and Sumlinski, M. (1994), "Trends in Private Investment in Developing Countries." Discussion Paper, No. 20, IFC, Washington, D.C., World Bank.
- Morisset, J. (2000), "Foreign Direct Investment in Africa: Policies also Matter." Washington, D.C., World Bank.
- Morisset, J. (2000), "The World Bank and the International Finance Corporation." Washington, D.C., World Bank.
- Morisset, J. and Pirnia, N. (2000), "How tax Policy and Incentives Affect FDI-A 2509, Review." Policy Research Working paper number World Bank and IFC.
- Mukherjee, C., White, H. and Wuyts, M. (1998), "Econometrics and Data Analysis For Developing Countries." Routledge, London.
- Mulenga, S. (1996), "Determinants of Foreign Direct Investment in Zambia." Msc. Thesis, Addis Ababa University.
- Neter, J. and Wasserman, W. (1974), "Applied Linear Statistical Models." Richard D. Irwin, Inc., USA.
- Núñez, W.P (1990), "Foreign Direct Investment and Industrial Development in Mexico." Organisation for Economic Corporation and Development, Paris.
- OECD (1991), "Technology and Productivity: The challenge for Economic Policy," Paris.
- Oman, C. (2000), "Policy Competition for FDI - A study of competition among governments to attract FDI." Organisation for Economic Corporation and Development, Paris.
- Papanek, G.F. (1973), "Aid, Foreign Private Investment, Savings and Growth in LDCs." Journal of Political Economy, 81: 120-30.
- Pindick, R.S. and Rubinfeld, D.L. (1991), "Econometric Models and Economic Economic Forecasts." Mc Graw-Hill, Inc., Singapore.
- Prakash, L. and Assaf, R. (2001), "How Beneficial Is Foreign Direct Investment for Developing of Countries?" A quarterly margazine of IMF, Vol.38, 1, June.

- Repkin, A. and Walsh, P. (1998), "European trade and FDI U-shaping industrial Output in central and eastern Europe- theory and evidence." IMF Working paper WP/98/150; October.
- Romer, P.M. (1986), "Increasing Returns and Long-Run Growth." Journal of Political Economy, Vol. 94, 1002-37.
- Saasa, O.S. (1987) "Zambia's Policies towards Foreign Investment – The case of mining and non-mining sectors." Scandinavian Institute of African Studies, Research report no. 79, Uppsala.
- Sader, F. (2000) "Attracting Foreign Direct Investment into Infrastructure (why is it So difficult?)." Occasional Paper No. 12, Washington, D.C., World Bank.
- Singh, H. (1995) "Some Evidence on Determinants of FDI in Developing Countries." Washington, D.C. World Bank.
- Soderstein, B. (1992) "International Economics." Macmillan publishing Ltd, USA.
- Suman, B. and Sanjib, P (2001), "Can Developing Countries use Foreign Investment to move up the Development Ladder." National Council of Applied Economic Research, New Delhi-2.
- Thomsen, Stephen (1999), "Southeast Asia: The Role of FDI Policies in Development." Working Papers on International Investment, Organisation for Economic Corporation and Development, Paris.
- UNCTAD (1995), "Trans-national Corporations and Competitiveness." United Nations, New York and Geneva.
- UNCTAD (1996), "Foreign Direct Investment, Trade and Migration." United Nations, New York and Geneva.
- UNCTAD (1996), "Investment, Trade and International policy arrangements." Nations, New York and Geneva.
- UNCTAD (1996), "World Investment Directory." Volume V, Africa, United Nations, New York and Geneva.
- UNCTAD (1997), "Trans-national Corporations, Market Structure and Competitive Policy." United Nations, New York and Geneva.
- UNCTAD (1999), "World Investment Report - Foreign Direct Investment and the challenge of development." United Nations, New York and Geneva.

- UNCTAD (2001), "Promoting Linkages." United Nations, New York and Geneva.
- UNCTAD (2001), "Transnational Corporations and Export Competitiveness." United Nations, New York and Geneva.
- UNDP (1999), Human Development Report, 1999.
- Wong with Jomo (2001), "The Impact of Foreign Capital Flows on the Malaysian Economy, 1966-96." Faculty of Economics and Administration, University of Malaya, Malaysia.
- World Bank (1993), "Global Economic Prospects and the Developing Countries." Washington, D.C., USA.
- World Bank (1995), "Africa development indicators." Washington, D.C., USA.
- World Bank (1997), "Private Capital flows to Developing countries: The Road to Financial Integration." Washington, D.C., USA.
- World Bank (1999)a, "World development indicators." Washington, D.C., USA.
- World Bank (1999)b, "Global development finance, Analysis and summary tables." Washington, D.C., USA.
- World Bank (1999)c, "Global development finance, country tables." Washington, D.C., USA.
- World Bank (2000), "Global development finance, country tables." Washington, D.C., USA.
- World Bank (2001), "Global development finance, Analysis and Summary tables." Washington, D.C., USA.
- World Bank (2002)a, "Africa development indicators." Washington, D.C., USA.
- World Bank (2002)b, "Global development finance, financing the poorest countries." Washington, D.C., USA.
- World Bank (2002)c, "Zambia-Country Assistance Evaluation, Overview of economic and social development." No. 25075, November, Lusaka.
- World Bank (2002)d, "Global development finance, country tables." Washington, D.C., USA.

APPENDICES

Appendix 1: Data set (Y=GDP; S=Savings; FDI= Foreign Direct Investment;
POPS=Population growth rate; DEBT= External debt; CX=Exports)

YEAR	Y(US \$mn)	S/Y(%)	FDI/Y(%)	POPS(%)	DEBT/Y(%)	CX/Y(%)
1970	1730	43.2	-17.2	4.3	37.8	57.7
1971	1749	35.2	0	4.4	39.4	70.1
1972	1910	36.9	1.5	4.5	39.7	39.7
1973	1892	45	1.7	4.7	43.5	60.5
1974	2019	45.9	1.9	4.8	47.4	69.7
1975	1967	21	1.9	5.0	68.8	41.2
1976	2019	28.9	1.5	5.1	75.5	51.4
1977	1986	22.1	0.9	5.3	117.9	45.1
1978	1998	20.5	2	5.5	129.4	42.8
1979	1937	23.1	1.8	5.5	157.3	70.9
1980	1976	19.3	3.14	5.7	165	85.93
1981	2119	6.8	-1.8	5.9	171.4	50.9
1982	2059	7.9	1.89	6.1	180.1	49.7
1983	2019	12.6	1.29	6.2	188.5	41.4
1984	1982	16.3	0.86	6.3	192	48.13
1985	2014	15.4	2.58	6.7	227.2	43.35
1986	2015	22.6	1.39	7	285.1	36.67
1987	2078	18	3.61	7.3	318.9	43.02
1988	2193	18.7	4.24	7.5	311.9	56.63
1989	2174	3.8	7.54	7.1	308.6	49.24
1990	2185	17.8	9.29	7.4	331.4	56.16
1991	2943	13.2	1.16	7.6	242.2	41.56
1992	2882	5.6	4.65	7.8	236.8	40.6
1993	3078	8.9	4.03	8	215.6	43.18
1994	3559	7.4	1.12	8.8	191.2	42.15
1995	3471	12.2	2.79	9.1	200.3	36.07
1996	3699	5.3	3.16	9.5	190.7	36.12
1997	3821	9.4	5.42	9.8	174.1	41.69
1998	3750	3.9	5.28	10.1	183.1	44.56
1999	3826	-0.9	4.26	10.2	170.1	45.84
2000	3959	3.1	3.18	10.3	159.4	46.5

Sources: IFS Yearbook, IFS Monthly Issues 1992-2002
Bank of Zambia Monthly Economic Indicators
Ministry of Finance Macroeconomic Indicators

Appendix 2: Data set (RER=Exchange rate; INFL=Inflation; INT=Deposit Interest rate; GDPPC=GDP per capita; L/L=Labour force growth rate; INV=Investment)

YEAR	RER(%)	INFL(%)	INT(%)	GDPPC(US\$)	Y/R(%)	L/L(%)	INV(%)
1970	0.71	2.7	3.5	407	7.7	4.6	29.6
1971	0.71	6.04	3.5	398	1.1	6.7	37.3
1972	0.65	5.06	3.8	422	9.2	0.5	35.3
1973	0.64	6.46	4.0	404	-0.9	1.3	29.2
1974	0.64	8.1	4.0	418	6.7	3.2	36.4
1975	0.72	10.13	4.0	395	-2.5	2.1	40.5
1976	0.79	18.8	5.3	393	2.6	-6.1	23.8
1977	0.8	19.77	6.3	375	-1.6	0.3	24.7
1978	0.79	16.35	6.3	365	0.6	-0.8	23.9
1979	0.79	9.72	6.8	351	-0.3	1.9	14.1
1980	0.87	11.63	7.0	347	2	1.34	23.3
1981	0.93	12.98	6.2	359	7.2	-1.32	19.3
1982	1.26	13.59	6.0	338	-2.8	-2.14	16.8
1983	1.81	19.6	7.0	326	-1.9	-0.54	13.8
1984	3.14	20.01	7.7	315	-1.8	2.94	14.7
1985	7.79	-99.59	15.3	301	1.6	-0.82	14.9
1986	9.25	33	17.7	288	0.05	-0.28	23.8
1987	8.27	50	13.2	285	3.1	1.39	13.9
1988	13.81	50	11.4	292	5.5	0.82	11.4
1989	66.7	133.33	11.4	306	-0.9	0.81	9.9
1990	116.4	104.76	24.8	295	0.5	1.34	15.4
1991	172.21	100	33.0	387	34.7	-4.51	11
1992	452.76	165.12	48.5	369	-2.1	-3.01	11.9
1993	670.24	183.77	46.5	385	6.8	-2.87	15
1994	680.8	54.56	46.1	404	15.6	0	8.2
1995	933.4	34.9	30.2	381	-2.5	-1.47	15.9
1996	1275.5	43.07	42.1	389	6.5	0.5	12.8
1997	1414.8	24.46	34.5	390	3.3	0	14.6
1998	2298.9	24.49	13.1	371	-1.9	-2.6	16.4
1999	2632.2	36.53	15.2	375	2	2.3	17.9
2000	4157.8	30.1	18.7	384	3.5	1.9	18.3

Sources: IFS Yearbook, IFS Monthly Issues 1992-2002
Bank of Zambia Monthly Economic Indicators
Ministry of Finance Macroeconomic Indicators

Appendix 3: Zambia, Actual FDI, FDI/GDP, 1970-2000

Year	FDI (US \$ Millions)	FDI/GDP (Percent)
1970	-297	
1971	0	-17.2
1972	29	0
1973	32	1.5
1974	38	1.7
1975	38	1.9
1976	31	1.9
1977	18	1.5
1978	39	0.9
1979	35	2
1980	62	1.8
1981	-38	3.14
1982	39	-1.8
1983	26	1.89
1984	17	0.86
1985	52	2.58
1986	28	1.39
1987	75	3.61
1988	93	4.24
1989	164	7.54
1990	203	9.29
1991	34	1.16
1992	134	4.65
1993	124	4.03
1994	40	1.12
1995	97	2.79
1996	117	3.16
1997	207	5.42
1998	198	5.28
1999	163	4.26
2000	126	3.18

Source: UNCTAD, 1996, World Bank 1995, 2002a

Appendix 4: Zambia, Balance of Payments(BOP), 1980 - 2000.

Year	Current A/c		Capital A/c Balance (US \$' Millions)	Overall Balance (US \$' Millions)
	Trade Balance (US \$' Millions)	Balance (US \$' Millions)		
1980	343	-537	313	-225
1981	-69	-742	270	-472
1982	-61	-566	175	-391
1983	212	-271	249	-22
1984	280	-153	64	-89
1985	226	-398	230	-169
1986	175	-350	250	-101
1987	267	-248	-10	-258
1988	502	-295	63	-232
1989	566	-222	116	-105
1990	-257	-597	810	213
1991	420	-307	120	-187
1992	-218	-135	-141	-258
1993	-24	-30	-37	-182
1994	64	47	-12	-70
1995	-8	-146	-77	-236
1996	-62	-122	49	-80
1997	-27	-239	166	-127
1998	-148	-269	-5	-249
1999				
2000				

Source: IMF, International financial statistics-Year books, 1994 and 2000

Appendix 5: Zambia, Foreign affiliates, 1993-2001

Company	Home economy	Industry
A. Industrial		
Central Cigarettes Manufacturers Ltd.	United Kingdom	Tobacco
Hoechst (Zambia) Ltd.	Germany	Chemicals
Colgate-Palmolive (Zambia) Ltd.	United States	Chemicals
Shell Chemicals (Zambia) Ltd.	United Kingdom	Coal and Petroleum
Copperbelt Bottling Co. du Cameroun SA	United Kingdom	Beverages
Chloride Zambia Ltd.	United Kingdom	Chemicals
Copper Zambia Ltd.	United Kingdom	Coal
Speciality Foods Zambia Ltd.	Switzerland	Food
Cinderella Investments Ltd	Korea	Manufacturing
China Hainan Zamibia Ltd.	China	Construction
Chilanga Cement Plc	French	Manufacturing
Turtle mining and Limeworks Limited	India	Mining
Master Drilling (Z) Limited	South Africa	Construction
Anvil Mining (Z) Ltd.	British	Mining
CRTV (Z) Limited	China	Engineering
Shunya Enterprises Ltd.	China	Manufacturing
Equinox Copper Ventures Limited	Australian	Mining
New Era Pharmaceuticals Ltd.	China	Manufacturing
Dunlop (Z) Ltd.		
B. Tertiary		
Agip (Zambia) Ltd.	Italy	Distributive trade
BP (Zambia) Ltd.	United Kingdom	Distributive trade
Caltex Oil Zambia Ltd.	United States	Distributive trade
Total Zambia Ltd.	France	Distributive trade
Lonrho (Zambia) Ltd.	United Kingdom	Distributive trade
Zambia Hotels Properties Ltd.	United Kingdom	Other services
AMI Zambia Ltd.	Belgium	Communication
ITM Zambia Ltd.	luxembourg	Transport
Mat Log Limited.	Dutch	Agriculture
Microlink Technologies Ltd	Kenya	Service
Golf View Hotel Ltd.	British	Tourism
Zambia Plant Hire	South Africa	Service
Ray Mordt Hydraulics (Z) Limited	South Africa	Service
Bangweulu Lodge Limited	South Africa	Tourism
Celtel (Z) Ltd	South Africa	Communication
Telecel	South Africa	Communication

C. Finance and Insurance

Standard Chartered Bank Zambia Ltd	United Kingdom	Finance
Barclays Bank Zambia Ltd	United Kingdom	Finance
Meridien BIAO Bank Ltd.	France	Finance
Stanbic Bank Zambia Ltd.	South Africa	Finance
Citibank Zambia Ltd	United States	Finance
Indo-Zambia Bank Ltd.	India	Finance
Africa Life Assurance Co. (Z) Ltd	South Africa	Finance

Source: UNCTAD, 1996: 440, and
ZIC, 2002 survey reports

Appendix 6: Investment incentives

The Investment Act of 1993 – some of the incentives included:

- Duty-free exemption for agriculture and mining machinery;
- 5% customs duty on other capital machinery;
- Duty exemptions on raw material imports of organic and inorganic chemicals, iron and steel, rubber and plastics;
- 5% duty on other raw materials;
- 15% duty on intermediate goods;
- 25% duty on final products;
- 15% income tax on non-traditional exports;
- Tax on companies listed on the Lusaka Stock Exchange is 30%, compared to the normal 35% corporate tax;
- Excise duty on electricity is 7%;
- Deductible allowances of between of 5% and 50%
- 100% profit repatriation
- No foreign exchange controls;
- Guarantee against compulsory acquisition of property
- Buildings used for manufacturing, mining or hotels qualify for wear and tear allowance of 5% of the cost, plus an initial allowance of 10% of the cost in the year in which the building was first used; and
- Expenditures on the conduct of research, technical education or any further training related to a company's specific business activity, are not eligible for tax deductions.

Incentives offered to investment certificate holders:

- In a rural area, the enterprise pays one-seventh of the normal 35% corporate income tax rate in its first five years of operation; and
- 15% income tax on export earning.

Agricultural incentives

- Dividends payable to farmers are tax exempt for the first five years of operation;
- 15% income tax on farming profits
- Capital expenditure on farm improvements qualify for an allowance of 20% per annum for each of the first five years;
- Duty on agricultural such as bovine semen, animal embryos had been removed completely;
- Duty rate on green house plastic sheeting, tubes, pipes and hollow porofilies has been reduced from 25% to 15%;
- Duty on the medium used for growing roses has been removed;
- Duty on cold room equipment has been reduced form 25% to 5%;
- Full tax allowance for outlay on land development, conservation and other costs;
- Substantial rate of depreciation allowing farm machinery to be rapidly written off against tax; and
- Special development allowances for growing certain crops such as tea, coffee, bananas and citrus fruits.

Export incentives

Special incentives are offered to exporters of non-traditional products, such as reduced corporate tax at 15%. Special exemption from duty and sales tax on imports and machinery is offered to:

- Exporters of non-traditional exports with net forex earnings;
- Tourism investment with forex earnings in excess of 25% of gross annual earnings; and
- Agro-related products for exports.

Mining incentives

- Mineral royalty rate reduced from 2% to 0.6% of gross value;
- Exemption from payment of customs duty on consumables and mineral royalty up to a cap of US \$16 million in the first year and US \$15 million per for the next 4 years;
- Copper and cobalt price participation fees are tax deductible;
- No payment of excise duty on electricity;
- Corporate tax rate has been reduced from 35% to 25% and the period for carry forward of losses will be 20 years;
- No payment of withholding of tax on interest dividends, royalties and management fees paid to shareholders and affiliates; and
- For the purpose of the Income Tax Act, the mines be deemed a '1975 new mine' allowing for the deduction of 100% of capital expenditure.

Tourism incentives

- Defining the new hotel as an industrial building to industrial building allowance of 10%;
- Treating the amount paid for the purchase of an existing property as part of the cost of constructing a new hotel and considered as capital investment, thereby qualifying for the industrial building allowance;
- Defining the company as a non-traditional exporter – so attracting a lower corporate income tax rate on foreign earnings;
- Provide partial relief for the casino levy;
- The tourism activities that are zero-rated have been to include boat cruising, micro-lighting, helicopter tours and walking safaris;
- Duty on importation of aeroplanes of any weight has been removed; and
- The waiver on tourist visas has been re-instated.

Investment Guarantees

Zambia is a member of MIGA. In case of disputes, arbitration may be sought through the Zambia High Court, ICSID or UNCITRAL. In the event of expropriation, the Investment Act guarantees full compensation at market value and free transfer of funds in the currency in which the investment was made.

TAXATION

Corporate tax in Zambia is:

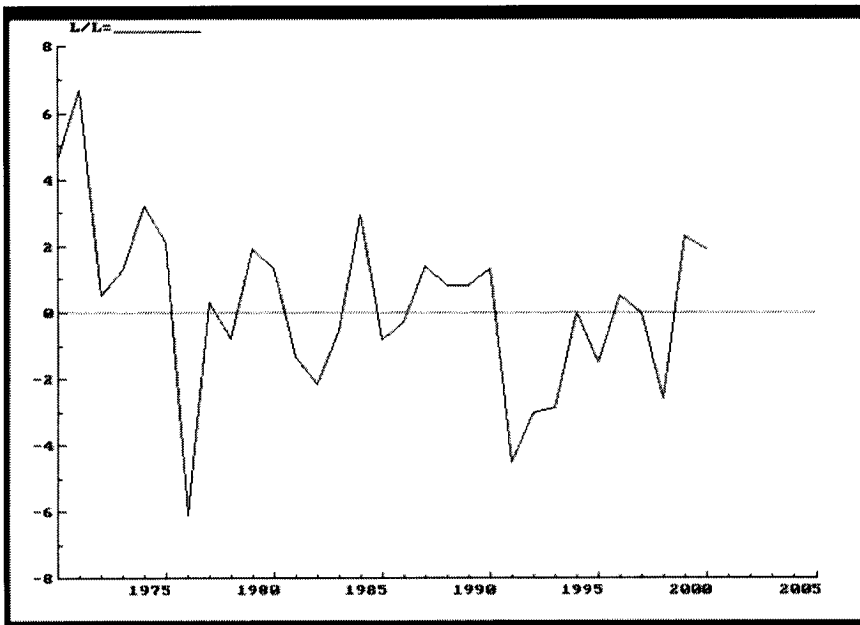
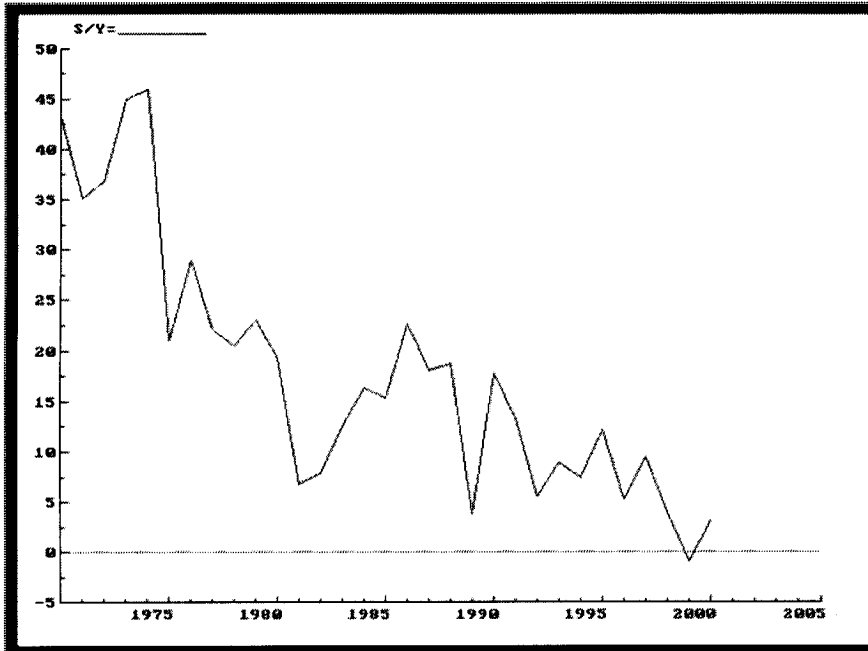
- 35 percent – manufacturing.

- 30 percent – companies listed on the LuSe.
- 15 percent – non-traditional export companies.
- 15 percent – chemical fertilizer production.
- 15 percent – farming.
- 10-30 percent – personal income tax.
- 15 percent – withholding tax.
- 17.5 percent – value added tax.
- Banking and financial institutions:
 - Up to ZK250 million 35%
 - Above ZK250 million 45%.

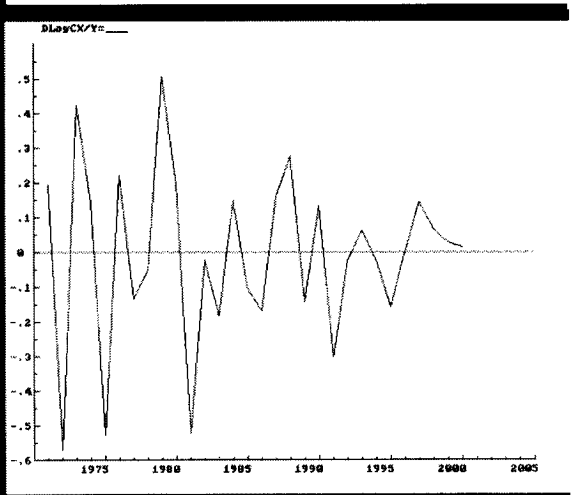
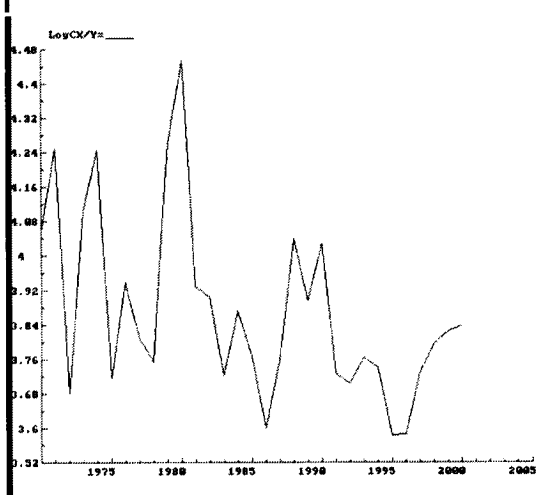
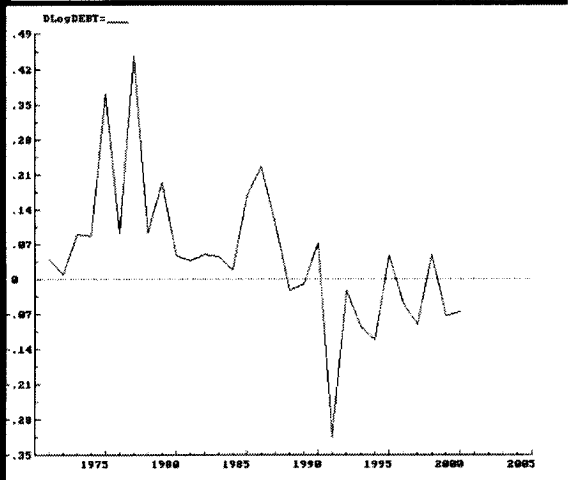
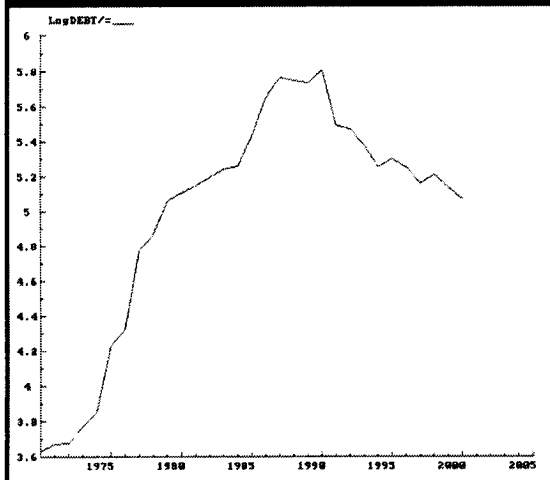
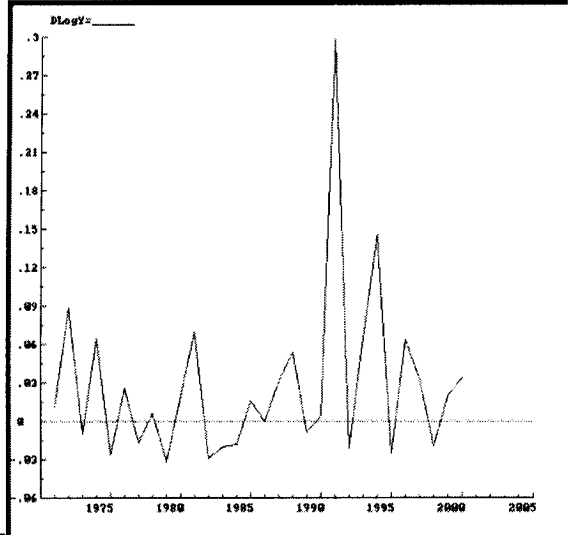
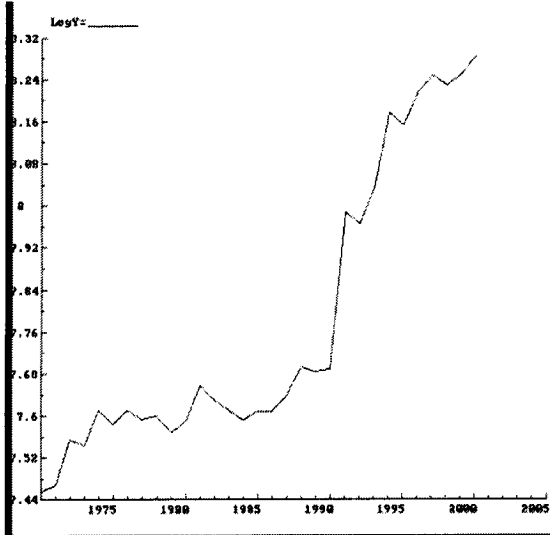
There is no capital gains tax but property tax is applicable on the transfer of immovable property and on the transfer of stock and shares in Zambian incorporated companies. Withholding tax is not levied on resident contractors and suppliers or public entertainment fees.

Double taxation agreements have been concluded with Botswana, Canada, Denmark, Finland, France, Germany, India, Ireland, Italy, Japan, Kenya, Netherlands, Norway, Romania, South Africa, Sweden, Switzerland, Tanzania, Uganda, United Kingdom and the United States of America.

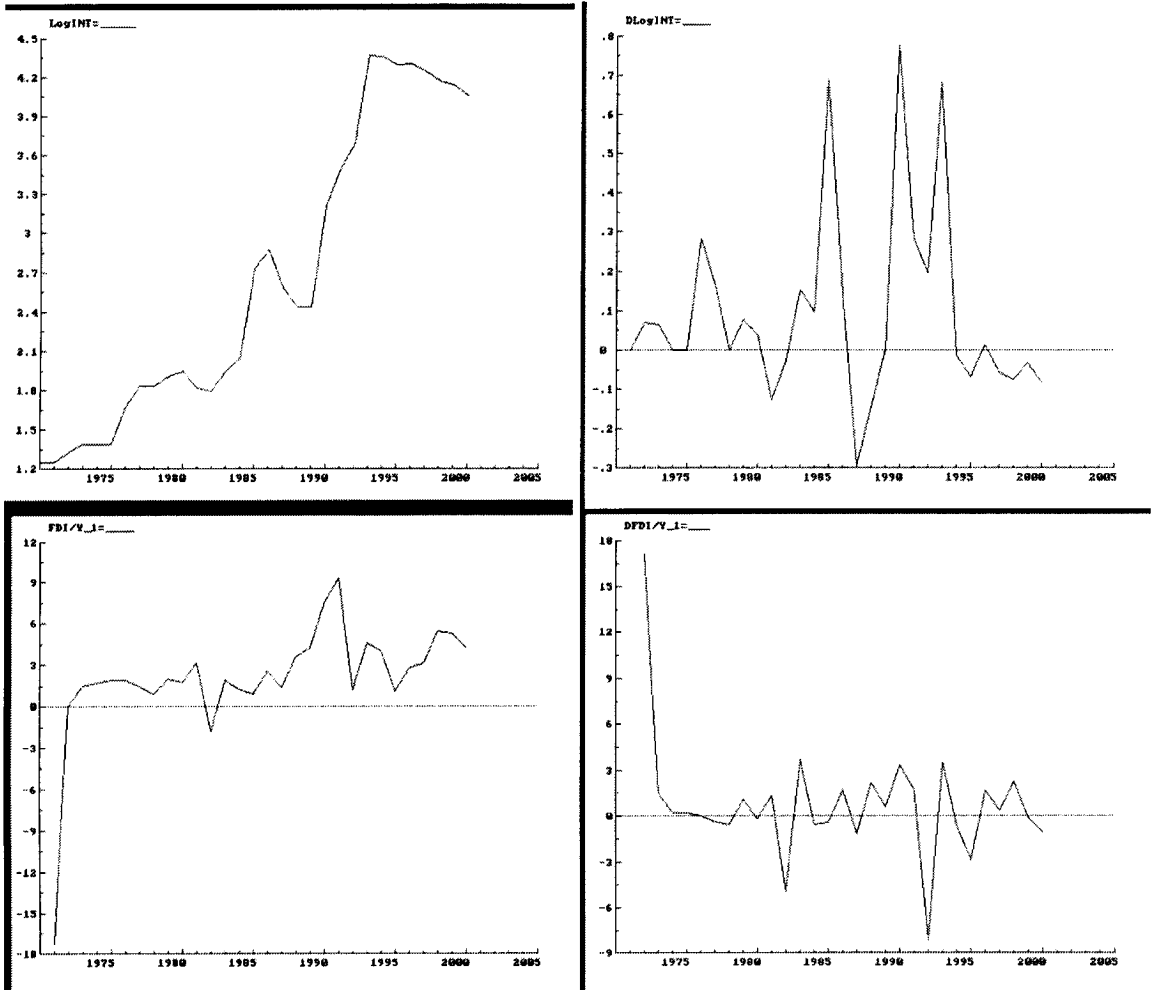
Appendix 7: Graphical representation of variables in levels



Appendix 8: Graphical representation of variables in levels and differences



Appendix 9: Graphical representation of variables in levels and differences



Appendix 10: Zambia's debt service by Creditor, 1998-2000 (US\$'m)

Creditor	1998	1999	2000
Bilateral	42.5	66.9	55
Paris Club	29.7	51.1	34.4
Others	12.8	15.8	20.6
Multilateral	89.4	86.9	84.1
IBRD/IDA	38.7	27.6	27.8
IMF	8	9.1	8.3
Others	42.7	50.2	48
Total	131.9	153.8	139.1
Liquidity ratios			
<i>Debt service/Exports</i>	<i>16.2</i>	<i>20.3</i>	<i>17.3</i>
<i>Debt service/GDP</i>	<i>5.6</i>	<i>6.4</i>	<i>5.8</i>
<i>Debt service/Domestic revenue</i>	<i>11.7</i>	<i>11.6</i>	<i>7.1</i>

Source: Bank of Zambia (2000)

Appendix 11: Reduction Process - EQ(2) Modelling ΔLogY by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	PartR ²
Constant	0.016064	0.010521	1.527	0.1491	0.1427
ΔLogY_{-1}	-0.10903	0.16740	-0.651	0.5254	0.0294
S/Y	-0.0025392	0.0012973	-1.957	0.0706	0.2149
S/Y_{-1}	0.0036217	0.0011306	3.203	0.0064	0.4229
L/L	-0.0017598	0.0031838	-0.553	0.5892	0.0214
L/L_{-1}	-0.0030558	0.0029435	-1.038	0.3168	0.0715
$\Delta\log(\text{DEBT}/Y)$	-0.23186	0.055277	-4.195	0.0009	0.5569
$\Delta\log(\text{DEBT}/Y)_{-1}$	-0.020108	0.070039	-0.287	0.7782	0.0059
$\Delta\text{L}(\text{CX}/Y)$	0.013977	0.031854	0.439	0.6675	0.0136
$\Delta\text{L}(\text{CX}/Y)_{-1}$	0.032864	0.025181	1.305	0.2129	0.1085
ΔLDINT	0.013105	0.026664	0.492	0.6307	0.0170
ΔLDINT_{-1}	-0.032389	0.045987	-0.704	0.4928	0.0342
$\Delta\text{FDI}/Y_{-}$	0.0031146	0.0021426	1.454	0.1681	0.1311
ECT	-0.68308	0.20566	-3.321	0.0050	0.4407
DM1991	0.12430	0.041474	2.997	0.0096	0.3908

 $R^2 = 0.933529$ $F(14, 14) = 14.044$ [0.0000] $\sigma = 0.0243533$ $DW = 2.15$

RSS = 0.008303161476 for 15 variables and 29 observations

AR 1- 2F(2, 12) = 0.18389 [0.8343]

ARCH 1 F(1, 12) = 0.010821 [0.9189]

Normality Chi^2 (2) = 0.61635 [0.7348]

RESET F(1, 13) = 0.26295 [0.6167]

 Δ = first difference operator; DM = Dummy variable

Appendix 12: Reduction Process - EQ(3) Modelling ΔLogY by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.015391	0.0099383	1.549	0.1423	0.1379
ΔLY_{-1}	-0.069952	0.094429	-0.741	0.4703	0.0353
S/Y	-0.0025926	0.0012440	-2.084	0.0547	0.2246
S/Y_{-1}	0.0035817	0.0010871	3.295	0.0049	0.4198
L/L	-0.0013214	0.0027071	-0.488	0.6325	0.0156
L/L_{-1}	-0.0032302	0.0027907	-1.157	0.2652	0.0820
$\Delta\text{L(DEBT/Y)}$	-0.23500	0.052501	-4.476	0.0004	0.5719
$\Delta\text{L(CX/Y)}$	0.014062	0.030863	0.456	0.6552	0.0137
$\Delta\text{L(CX/Y)}_{-1}$	0.034969	0.023342	1.498	0.1548	0.1302
ΔLDINT	0.016803	0.022623	0.743	0.4691	0.0355
ΔLDINT_{-1}	-0.034491	0.043989	-0.784	0.4452	0.0394
$\Delta\text{FDI/Y}_{-1}$	0.0033252	0.0019506	1.705	0.1089	0.1623
ECT	-0.68769	0.19866	-3.462	0.0035	0.4441
DM1991	0.12548	0.039988	3.138	0.0068	0.3963

 $R^2 = 0.933137$ $F(13, 15) = 16.103$ [0.0000] $\sigma = 0.0235967$ $DW = 2.19$

RSS = 0.008352044474 for 14 variables and 29 observations

AR 1- 2F(2, 13) = 0.18876 [0.8302]

ARCH 1 F(1, 13) = 0.007389 [0.9328]

Normality Chi² (2)= 0.46333 [0.7932]

RESET F(1, 14) = 0.25489 [0.6215]

 $\Delta = \text{first difference operator}; DM = \text{Dummy variable}$

Appendix 13: Reduction Process - EQ(4) Modelling ΔLogY by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.015029	0.0092729	1.621	0.1235	0.1338
DLY ₋₁	-0.077343	0.080838	-0.957	0.3521	0.0511
S/Y	-0.0023334	0.00086785	-2.689	0.0155	0.2984
S/Y ₋₁	0.0034073	0.00091488	3.724	0.0017	0.4493
L/L ₋₁	-0.0035557	0.0025771	-1.380	0.1856	0.1007
DL(DEBT/Y)	-0.24317	0.046287	-5.253	0.0001	0.6188
DL(CX/Y) ₋₁	0.030932	0.020827	1.485	0.1558	0.1148
DLDINT	0.018853	0.020443	0.922	0.3693	0.0476
DLDINT ₋₁	-0.036884	0.041525	-0.888	0.3868	0.0443
D(FDI/Y) ₋₁	0.0028911	0.0015036	1.923	0.0714	0.1786
ECM8 ₋₁	-0.67875	0.17852	-3.802	0.0014	0.4596
DM1991	0.12861	0.035927	3.580	0.0023	0.4298

 $R^2 = 0.9314$ $F(11, 17) = 20.983 [0.0000]$ $\sigma = 0.0224513$ $DW = 2.17$

RSS = 0.008569047881 for 12 variables and 29 observations

AR 1- 2F(2, 15) = 0.10566 [0.9004]

ARCH 1 F(1, 15) = 0.067075 [0.7992]

Normality Chi² (2)= 0.5582 [0.7565]

RESET F(1, 16) = 0.44175 [0.5157]

A = first difference operator; DM = Dummy variable

Appendix 14: Reduction Process - EQ(5) Modelling ΔLogY by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.016318	0.0085787	1.902	0.0724	0.1600
ΔLY_{-1}	-0.10093	0.075367	-1.339	0.1963	0.0863
S/Y	-0.0019218	0.00077613	-2.476	0.0229	0.2440
S/Y_{-1}	0.0029027	0.00078527	3.696	0.0015	0.4183
L/L_{-1}	-0.0023681	0.0020987	-1.128	0.2732	0.0628
$\Delta\text{L}(\text{DEBT/Y})$	-0.24052	0.043085	-5.582	0.0000	0.6212
$\Delta\text{L}(\text{CX/Y})_{-1}$	0.027739	0.020095	1.380	0.1835	0.0911
$\Delta\text{FDI/Y}_{-1}$	0.0027888	0.0014365	1.941	0.0672	0.1655
ECT	-0.54420	0.099054	-5.494	0.0000	0.6137
DM1991	0.12100	0.029695	4.075	0.0006	0.4664

 $R^2 = 0.926075$ $F(9, 19) = 26.446$ [0.0000] $\sigma = 0.0220456$ $DW = 2.30$

RSS = 0.009234194199 for 10 variables and 29 observations

AR 1- 2F(2, 17) = 0.30844 [0.7386]

ARCH 1 F(1, 17) = 0.338 [0.5686]

Normality Chi² (2) = 0.46497 [0.7926]

RESET F(1, 18) = 1.2229 [0.2834]

 $\Delta = \text{first difference operator}; DM = \text{Dummy variable}$

Appendix 15: Reduction Process - EQ (2) Modelling S/Y by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	PartR ²
Constant	0.37752	1.9431	0.194	0.8486	0.0025
S/Y ₋₁	0.78834	0.14154	5.570	0.0001	0.6741
Δ FDI/Y ₋₁	0.97743	0.32431	3.014	0.0087	0.3772
Δ log(DEBT/Y)	2.9187	13.960	0.209	0.8372	0.0029
Δ log(DEBT/Y) ₋₁	9.1593	11.646	0.787	0.4438	0.0396
Δ log(CX/Y)	17.870	4.5142	3.959	0.0013	0.5109
Δ log(CX/Y) ₋₁	-3.1769	4.9659	-0.640	0.5320	0.0266
Δ LogY	5.3746	29.053	0.185	0.8557	0.0023
Δ LogY ₋₁	26.877	28.797	0.933	0.3654	0.0549
L/L	0.68979	0.57577	1.198	0.2495	0.0873
L/L ₋₁	0.082203	0.47329	0.174	0.8644	0.0020
Δ LogINT	2.1197	3.0661	0.691	0.4999	0.0309
Δ LogINT ₋₁	3.5189	3.5281	0.997	0.3344	0.0622
ECT	-0.78106	0.25639	-3.046	0.0082	0.3822

 $R^2 = 0.918835$ $F(13, 15) = 13.062$ [0.0000] $\sigma = 4.5707$ $DW = 2.08$

RSS = 313.3699411 for 14 variables and 29 observations

AR 1- 2F(2, 13) = 0.13584 [0.8742]

ARCH 1 F(1, 13) = 0.0075196 [0.9322]

Normality $\text{Chi}^2(2) = 3.5902$ [0.1661]

RESET F(1, 14) = 2.5257 [0.1343]

 $\Delta =$ first difference operator.

Appendix 16: Reduction Process - EQ (3) Modelling S/Y by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.32896	1.6868	0.195	0.8477	0.0022
S/Y ₋₁	0.80621	0.10984	7.340	0.0000	0.7601
Δ FDI/Y ₋₁	0.99020	0.28947	3.421	0.0033	0.4077
Δ log(DEBT)	0.47290	7.1074	0.067	0.9477	0.0003
Δ log(DEBT/Y) ₋₁	9.4024	10.730	0.876	0.3931	0.0432
Δ log(CX/Y)	17.551	4.0260	4.359	0.0004	0.5278
Δ log(CX/Y) ₋₁	-2.9179	4.5415	-0.642	0.5291	0.0237
Δ LogY ₋₁	25.573	25.647	0.997	0.3327	0.0553
L/L	0.67172	0.51489	1.305	0.2094	0.0910
Δ LogINT	2.2739	2.7763	0.819	0.4241	0.0380
Δ LogINT ₋₁	3.7341	3.0321	1.232	0.2349	0.0819
ECT	-0.78526	0.23357	-3.362	0.0037	0.3994

$R^2 = 0.918558$ $F(11, 17) = 17.431 [0.0000]$ $\sigma = 4.30075$ $DW = 2.04$

RSS = 314.4399505 for 12 variables and 29 observations

AR 1- 2F(2, 15) = 0.051446 [0.9500]

ARCH 1 F(1, 15) = 0.00031785 [0.9860]

Normality Chi² (2) = 3.4386 [0.1792]

RESET F(1, 16) = 2.8364 [0.1116]

Δ = first difference operator.

Appendix 17: Reduction Process - EQ(4) Modelling S/Y by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.14890	1.5560	0.096	0.9248	0.0005
S/Y ₋₁	0.79820	0.096258	8.292	0.0000	0.7835
Δ FDI/Y ₋₁	1.0085	0.26716	3.775	0.0013	0.4286
Δ log(DEBT/Y) ₋₁	12.170	9.3940	1.295	0.2107	0.0812
Δ log(CX/Y)	18.546	3.4736	5.339	0.0000	0.6001
Δ LogY ₋₁	33.390	21.732	1.536	0.1409	0.1105
L/L	0.63293	0.46558	1.359	0.1899	0.0886
Δ LogINT	2.7119	2.5750	1.053	0.3055	0.0552
Δ LogINT ₋₁	3.3219	2.8410	1.169	0.2568	0.0671
ECT	-0.83487	0.21008	-3.974	0.0008	0.4539

 $R^2 = 0.916499$ $F(9, 19) = 23.171 [0.0000]$ $\sigma = 4.11922$ $DW = 1.74$

RSS = 322.3909814 for 10 variables and 29 observations

AR 1- 2F(2, 17) = 0.50449 [0.6126]

ARCH 1 F(1, 17) = 0.04028 [0.8433]

Normality Chi²(2)= 1.8555 [0.3954]

RESET F(1, 18) = 3.4661 [0.0790]

 $\Delta =$ first difference operator.

Appendix 18: Reduction Process - EQ(5) Modelling S/Y by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	0.33335	1.5503	0.215	0.8319	0.0023
S/Y ₋₁	0.80368	0.096379	8.339	0.0000	0.7766
Δ FDI/Y ₋₁	0.97525	0.26600	3.666	0.0015	0.4019
Δ log(DEBT) ₋₁	11.668	9.4075	1.240	0.2292	0.0714
Δ log(CX/Y)	18.231	3.4701	5.254	0.0000	0.5798
Δ LogY ₋₁	30.548	21.622	1.413	0.1731	0.0907
L/L	0.70038	0.46241	1.515	0.1455	0.1029
Δ LogINT ₋₁	3.5526	2.8403	1.251	0.2254	0.0725
ECT	-0.88415	0.20536	-4.305	0.0003	0.4810

 $R^2 = 0.911625$ $F(8, 20) = 25.788$ [0.0000] $\sigma = 4.13044$ $DW = 1.72$

RSS = 341.2099365 for 9 variables and 29 observations

AR 1- 2F(2, 18) = 0.65763 [0.5301]

ARCH 1 F(1, 18) = 0.27183 [0.6085]

Normality Chi² (2) = 0.20548 [0.9024]Xi² F(16, 3) = 0.087816 [0.9997]

RESET F(1, 19) = 3.4544 [0.0786]

 $\Delta =$ first difference operator.

Appendix 19: Reduction Process - EQ(6) Modelling S/Y by OLS

The present sample is: 1972 to 2000

Variable	Coefficient	Std.Error	t-value	t-prob	Part R ²
Constant	-0.011077	1.5556	-0.007	0.9944	0.0000
S/Y ₋₁	0.90353	0.076460	11.817	0.0000	0.8639
Δ FDI/Y ₋₁	0.83383	0.25318	3.293	0.0033	0.3302
Δ log(CX/Y)	18.387	3.5202	5.223	0.0000	0.5536
Δ LogY ₋₁	11.095	14.222	0.780	0.4436	0.0269
L/L	0.39214	0.43326	0.905	0.3752	0.0359
ECT	-0.97602	0.19767	-4.938	0.0001	0.5256

$R^2 = 0.898023$ $F(6, 22) = 32.289$ [0.0000] $\sigma = 4.23044$ $DW = 1.65$

RSS = 393.7260237 for 7 variables and 29 observations

AR 1- 2F(2, 20) = 0.68644 [0.5148]

ARCH 1 F(1, 20) = 0.00016009 [0.9900]

Normality Chi²(2) = 0.22421 [0.8940]

Xi² F(12, 9) = 0.23398 [0.9889]

RESET F(1, 21) = 0.66309 [0.4246]

Δ = first difference operator.

Appendix 20: Trend of total debt flow to Zambia, 1970-2000
(US \$ million)

YEARS	DEBT FLOWS
1970	363
1980	690
1990	165
1991	384
1992	282
1993	241
1994	294
1995	2606
1996	236
1997	286
1998	84
1999	264
2000	287

Source: World Bank (1999c, 2000, 2002d)

Appendix 21: Model transformations

21.1 Growth equation

The empirical testing of the impact of FDI on economic growth is carried out using a conventional growth equation derived from a Cobb-Douglas production function expressed as

$$Y = TK^{\alpha}L^{\beta}$$

Where:

Y = real output at time t,

L = labour,

K = capital,

T = technology,

α = partial elasticity of output with respect to capital,

β = partial elasticity of output with respect to labour.

The conventional growth equation growth rate to investment rate (I/Y), the labourforce growth rate ($\Delta L/L$) and technology (a), expressed as:

$$\text{Growth} = a + bI/Y + c\Delta L/L.$$

Substituting the investment variable into its constituents of S/Y and FDI/Y,

$$\text{Growth} = a + b_1S/Y + b_2FDI/Y + c\Delta L/L,$$

Where:

S/Y = savings rate,

FDI/Y = foreign direct investment as a proportion of GDP,

$\Delta L/L$ = labourforce growth rate,

b_1 = partial elasticity of output with respect to domestic savings rate,

b_2 = partial elasticity of output with respect to foreign direct investment,

c = partial elasticity of output with respect to labourforce growth rate.

The conventional growth equation is further transformed as follows:

- (1) FDI growth rate (FDI/Y) is lagged by one year on the assumption that, generally investment changes would not affect growth and savings immediately, but would do so in the following year.
- (2) Foreign debt is included in the growth and savings equations as an additional explanatory variable. The rationale for this is that, to address the resource gap and finance growth, Zambia has for a long time been using external debt, which is actually another component of capital inflow from abroad.
- (3) Interest rate is also included as an addition explanatory variable in the models to measure the rate of return on savings and the opportunity cost of consumption. It is noteworthy that due to the financial repression paradigm under which Zambia has over time operated deposit rate is preferred because this is directly related to savings compared to other types of interest rates. Lending rates, for instance is inappropriate and this might even be collinear with investment.
- (4) Following a large number of empirical studies (Edwards, 1996; Feder, 1982 and Romer, 1986 to mention a few) that have supported the export-led hypothesis, we introduce exports as a variable in the growth equation. This is

done because exports like FDI, can also result in a higher rate of technological innovation and dynamic learning from abroad.

- (5) The presence of negative observations in the data on such variables as FDI, gross domestic savings rate and interest rate partly justifies the use of both ratios and logs in the specification of the models. Thus, data on all other model variables except FDI, gross domestic savings rate and interest rate is processed in logs.

Thus using the Ordinary Least Squares (OLS) method, the transformed growth equation is expressed as:

$$\begin{aligned} \text{Log}Y = a_0 + \Sigma a_{1i}S/Y + \Sigma a_{2i}(FDI/Y)_{t-1} + \Sigma a_{3i}L/L + \Sigma a_{4i}\text{Log}(DEBT/Y) \\ + \Sigma a_{5i}\text{Log}(CX/Y) + \Sigma a_{6i}\text{Log}INT + u_t \end{aligned} \quad (3)$$

Where $\text{Log}Y$ = real GDP growth,

S/Y = savings rate,

FDI/Y = foreign direct investment as a proportion of GDP,

L/L = labour force growth rate,

$\text{Log}(DEBT/Y)$ = log of foreign debt as a proportion of GDP,

$\text{Log}CX/Y$ = log of exports as a proportion of GDP,

$\text{Log}INT$ = log of deposit interest rates,

a_0 = constant,

a_{1i} , a_{2i} , a_{3i} , a_{4i} , a_{5i} , and a_{6i} = partial elasticities of output with respect to the individual variables that they are attached to,

t = current year,

$t-1$ = denotes a one year lag of a variable, and

u_t = stochastic error terms.

The expected parameter signs are $(a_{1i}>0)$, $(a_{2i}>0)$, $(a_{3i}>0)$, $(a_{4i}>0)$, $(a_{5i}>0)$, $(a_{6i}>0)$.

21.2 Savings equation

Overall savings, represented by gross domestic savings (GDS) is defined as the difference between income and consumption.

That is, $S = Y - C$, (4)

where S = gross domestic savings,

Y = GDP,

C = Consumption.

The savings rate is defined as S/Y , i.e. gross domestic savings scaled against GDP. The traditional Keynesian-type savings function can be augmented by variables like exports, per capita income, income growth rate, the population structure, foreign debt, interest rate, inflation and many other variables.

Wong and Jong (op cit: p30) observe that,

Under the “life-cycle hypothesis” developed by Modigliani and Brumberg, the savings rate is a positive function of income growth rate. This hypothesis maintains that savings mainly result from a desire to provide for consumption in old age. By generating higher lifetime incomes, a growing economy can therefore be expected to have positive effects on savings. This hypothesis also expects changes in the structure of the population to

affect the savings rate. This effect can be tested by using measures such as the population growth rate, the labour participation rate and others that may be used as proxies.”

Export performance is also expected to have a favourable influence on savings rate. Exports, especially of primary products, often result in highly concentrated incomes, and the standard savings theory suggests that the propensity to save from such income is high, Papanek (1972) in Wong with Jomo (Ibid: p30). Also, countries with good export performance tend to face fewer foreign exchange constraints on investment, and therefore tend to provide more of an incentive to save.

The savings equation is further transformed as follows:

2. To test the effect of FDI on domestic savings, most studies consulted included foreign capital inflow (FCI) as an additional explanatory variable, in properly specified savings functions¹⁶. FCI was thus inserted in the savings function as either an aggregated component or disaggregated in its constituents of FDI and DEBT. Any positive effect of FCI on the domestic savings rate will exert positive side effects on the investment rate. If an indirect effect exists, the orthodox treatment of FCI would expect benefits from such inflows to the recipient country. Similarly in this study, to test the impact of FDI on gross domestic savings in Zambia, FCI, in addition to the above-mentioned variables, will be inserted in the savings function in its disaggregated form.

¹⁶ See Fry (1993): p15

Using OLS method the transformed Keynesian-type savings equation will be used and is expressed as:

$$S/Y = b_0 + \sum b_{1i}(FDI/Y)_{t-1} + \sum b_{2i}\text{Log}(DEBT/Y) + \sum b_{3i}\text{Log}(CX/Y) + \sum b_{4i}\text{Log}Y + \sum b_{5i}\text{Log}(L/L) + \sum b_{6i}\text{Log}INT + v_t \quad (6)$$

Where: S/Y = savings as proportion of GDP,

FDI/Y = foreign direct investment as a proportion of GDP,

$\text{Log}(DEBT/Y)$ = log of foreign debt as a proportion of GDP,

$\text{Log}(CX/Y)$ = log of exports as a proportion of GDP,

$\text{Log}Y$ = real GDP growth,

$\text{Log}(L/L)$ = labour force growth rate as a proxy for change in the population structure,

$\text{Log}INT$ = log of deposit interest rate,

t = current year,

$t-1$ = denotes a one year lag of a variable, and

v_t = stochastic error terms,

b_0 = constant

$b_{1i}, b_{2i}, b_{3i}, b_{4i}, b_{5i}$ and b_{6i} = partial elasticities of savings with respect to the individual variables that they are attached to. The expected parameter signs are ($b_0 < 0$) ($b_{1i} > 0$) ($b_{2i} > 0$) ($b_{3i} > 0$) ($b_{4i} > 0$) ($b_{5i} > 0$), and ($b_{6i} > 0$), and are expected to be significant, which would suggest that savings rate is dependent on foreign direct investment, foreign debt, exports, real GDP growth, labour force growth rate and deposit interest rate.