Thesis

By

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THE UNIVERSITY OF DAR ES SALAAM

FOREIGN CAPITAL FLOWS, SAVING AND INVESTMENT RATES AND GROWTH IN TANZANIA: 1961-1985

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DECLARATION

I, GODWIN DANIEL MJEMA, do hereby declare that this thesis is my own work and has not been submitted for a degree course in any other University.

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ABSTRACT

This study undertakes to analyse quantitatively and qualitatively the impact of foreign capital flows on Tanzania's savings, investment and income growth during the 1961-1985 period.

Akin to a host of other Less Developed Countries (LDCs), Tanzania was, for this stated period of time, a recipient of multilateral and bilateral foreign capital, defined here to encompass loans of all categories and grants. The objective of such capital inflows was, like in many recipients, to relieve the country of the savings and foreign exchange constraints to economic growth claimed to prevail in a number of LDCs.

With respect to the terms under which foreign capital was extended, this study has found that, compared to other Sub-Sahara Africa (SSA) recipients, foreign capital to Tanzania had relatively lower interest rates, longer maturity and grace periods, thus the inflows had the potential to increase the country's domestic savings, investment and income growth.

There exists however, some theoretical controversies surrounding the impact of foreign capital flows on the savings investment and income growth of recipients. Whereas the 1960s was dominated by an upsurge of literature that supported the view that foreign capital would have a positive impact on the mentioned variables (Chenery and Strout, 1966), the 1970s was dominated by literature opposed to the above view. Griffin and Enos (1970) for instance showed empirically how foreign capital flows could have

adverse effects on the recipients' savings. The late 1980s on the other hand, saw the emergency of studies searching for precedence between foreign capital flows and domestic savings of recipient countries (Bowles, 1987). The debate on the impact of foreign capital flows is thus more of an empirical question than a theoretical issue.

In situating the debate on the impact of foreign capital flows to the Tanzanian context, this study has utilised a modified version of the Weisskopf (1972), Gupta (1975) and Hyuha (1984) models. The simultaneous equation model specified in this study employed time series data for the 1961-1985 period and was estimated by the conventionally used Two Stage Least Squares (2SLS) technique.

The study has found, among other things that, during the 1961-1985 period, foreign capital flows were negatively related to the domestic saving effort in Tanzania. This finding, which is in line with the Griffin - Enos (1970) hypothesis, tends to suggest that the inflows were substituting for the domestically available savings. Where income growth and investment are concerned, the results obtained show that there was, during this period, a positive relationship between foreign capital flows and these variables.

After carrying out precedence tests following the Granger (1967) and Sims (1972) tradition, the study has found that in Tanzania, and particularly during the 1961-1985 period, precedence was running from low domestic savings to foreign capital flows. These results are in line with Bowles' (1987) results for Tanzania during the 1961-1984 period. The structural break test results confirmed the existence in Tanzania, of a structural break around 1971, a feature suggesting that the regression

covering the 1961-1970 period could be structurally different from that covering the 1972-1990 period.

The policy implications emanating from this study point at among other things, the need for the Tanzanian government to increase its efforts aimed at mobilising domestic savings so that the in-coming foreign capital flows supplement the existing domestic savings. Also there is an urgent need to see to it that the incoming foreign capital flows from various sources are efficiently and optimally used.

CHAPTER I

INTRODUCTION

1.1 The Study Objectives

The objectives of this study, which are explained in details in section 1.3 include among others, an attempt to analyse both quantitatively and qualitatively the impact of foreign capital flows on the savings, investment and income growth process in Tanzania during the 1961-1985 period. A simultaneous equation model with savings rate, growth rate of income, per capita income and investment rate as endogenous variables is later developed in Chapter IV and will subsequently be applied as a tool of analysis in the quantification process in Chapter V. Qualitative analysis will also be used in an attempt to explain the manner in which capital flows were disbursed to Tanzania during this period.

In essence, the quantitative approach is tantamount to the examination of the impact of capital flows on economic growth of Tanzania, an aspect which has not been fully addressed, albeit increasing claims that the country has, since the time of its independence in 1961, received substantial amounts of capital flows and at ' better ' terms relative to the other African recipients.

The reasons for the choice of this time period for analysis are specified under Section 1.7. As a point of departure, in this introduction Chapter, an attempt is made to explain the need for foreign capital flows in most developing countries to which Tanzania belongs.

1.2 Significance of Foreign Capital in LDCs

Theoretically, the rationale for accepting foreign capital flows in Less Developed Countries (LDCs) is that, once secured, the flows will help to raise the ability of the recipient country to invest and thus promote its level of economic growth. In most LDCs, where the assumption often made is that of the presence of not only a saving, but also a binding foreign exchange constraint, receipts of foreign capital enables domestic savings to be realised as investment. The reason is that capital formation in most of these countries is dependent upon imported inputs.

Within the setting described above, as more and more foreign capital resources are realised, a recipient country is assisted by the flows to increase its capital stock thereby enabled to promote its economic growth.[1] However, for sustained economic growth to take place in these countries, foreign capital flows once made available must be used by the recipient in the most efficient manner that guarantees an increase in capital stock (Chenery and Strout, 1966).

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[1] For a discussion of the debate on the role of capital in development see for example Rosenstein -Rodan (1961) , Hirshman (1958) and Schumpeter (1949).

Economic growth not only in Tanzania but in most LDCs is said to be constrained by shortage of productive factors of production and where any one factor is singled out for importance, it has always been capital.[2] This however, is neither to deny nor to underplay the significance of the other factors of production in the economic development process of a country but as most economists will agree, a high rate of capital accumulation is a necessary, though undeniably, not a sufficient condition for rapid economic growth of a country. Recently however, modern growth theories have shown that, most of economic growth is not explained by increases in capital and labour alone, but equally important, by increases in their productivity.

Thus, it is also agreed in conventional wisdom that, if LDCs were to overcome the aforementioned savings and foreign exchange constraints to development, capital is said to have the greatest potential to assist them to achieve that goal more efficiently than the other factors of production. As any standard textbook on development economics will show, capital increases by increasing investment. More investment usually pre-supposes more savings to support the desired investment and income growth levels.[3] The significance and centrality of domestic savings to an economy is best understood by considering the task assigned to investment as the main determinant of the acceleration of the growth rate of national income as is often assumed in various growth models.[4]

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2 See for example E. Domar (1957).

3 For a thorough discussion of this see for example H. Chenery and A.Strout (1966).

4 See H.Chenery and A.Strout op. cit.

As applied to most LDCs, in a celebrated quote, Lewis (1954) underscored the importance of savings in economic development when he emphasised that:

> "The central problem in the theory of economic development is to understand the process by which a community which was previously saving and investing 5 percent of its national income or less, converts itself into an economy where voluntary saving is running at about 12 to 15 percent of national income or more. This is the central problem because the central fact of economic development is rapid accumulation"(p. 155).

However, due to widespread poverty, a feature which is predominant in LDCs, these countries can not generate the required capital internally and, under such circumstances, many LDCs are obliged to solicit alternative foreign sources of capital as a means of obtaining this seemingly vital factor of production.

It has often been claimed in economic literature (Krueger et al, 1989) foreign sources of capital in either aid or direct foreign investment (in some cases like Taiwan, South Korea, Singapore, Israel, Greece and Indonesia among others) enabled LDCs to purchase the needed investment goods which have in turn helped in the domestic capital accumulation process and have rendered further dependence on foreign capital flows to these countries to be either unnecessary or greatly reduced.[5]

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5 A discussion of the case of the "success" story of countries in South East Asia is made in Krueger et al (1986).

In emphasising this point, Krueger et al (1989) observed that for most LDCs,

> "The possibilities of securing rapid and sustained development by effective use of foreign assistance have been strikingly demonstrated in the past decade by such countries as South Korea, Israel and Singapore; where a substantial increase in investment financed by foreign loans and grants led to rapid growth of GNP followed by a steady decline in the dependence on external financing. Not only was growth accelerated by foreign assistance, but the ability of the economy to sustain further development from its own resources was substantially increased.(pp. 679-680)

It is now widely recognised among development economists and even some policy makers that although capital does not provide a sufficient condition for LDC's economic growth, it is a necessary one. In Tanzania, various development plans undertaken during the past two decades have always recognised and stressed the importance of raising savings and investment rates to support targeted growth rates. The investment and domestic savings mobilisation drive embarked on by the Tanzanian government during the First, Second and Third Five Year Development Plans in the mid 1960s, early 1970s and early 1980s respectively, is testimony to this.[6]

In addition, in the case of Tanzania, the savings self-sufficiency policy contained in the Arusha Declaration of 1967 which stressed among other things, the need for raising savings for development from domestic sources, is in line with the recognition of the

6 See for instance Tanzania Economic Trends (TET) 1988.

importance of domestic savings in the economic development of Tanzania.[7]

1.2.1 The Significance of Foreign Capital to Tanzania

The significance of foreign capital flows to Tanzania is recognised once it is articulated that, from the early 1970s to the mid 1980s, virtually all external financing (including long and short term loans and grants) of the country's budget has been made possible, as Table 1 below shows, by foreign aid.

7 See among others, J.K. Nyerere (1968) Freedom and Socialism :A Selection from Writings and Speeches 1965-1967 .

Table 1: Share of External Finance (Aid) in Government Budget

Year	Dexp (Tsh m)	Rexp (Tsh m)	Toexp (Tsh m)	Extfin (Tsh m)	Shaxdex (%)	Shaxtx (%)
1961	132.8	598.2	731.0	37.2	28.0	5.0
1962	143.5	675.6	819.1	31.0	21.6	3.7
1963	145.3	709.1	854.4	51.3	35.3	6.0
1964	203.9	816.1	1020.0	78.2	38.3	7.6
1965	230.0	892.0	1122.0	83.5	36.3	7.4
1966	294.4	982.1	1276.5	127.3	43.3	9.9
1967	344.1	1108.1	1452.2	84.0	24.4	5.7
1968	460.5	1172.6	1733.1	122.8	26.6	7.0
1969	631.0	1526.7	2157.7	122.0	19.3	5.6
1970	888.9	1631.4	2520.3	270.0	30.3	10.7
1971	884.4	1780.6	2665.0	385.2	43.5	14.4
1972	763.0	2223.2	2986.2	325.0	42.5	10.8
1973	1142.0	2785.8	3927.8	481.0	42.1	12.2
1974	2225.0	3961.1	6186.1	1038.0	46.6	16.7
1975	2252.0	3716.6	5968.6	1031.0	45.7	17.2
1976	3244.3	4702.5	7946.8	1510.0	46.5	19.0
1977	3331.0	6082.0	9413.0	2044.0	61.3	21.7
1978	4750.0	8295.0	13045.0	2427.2	51.0	18.6
1979	5184.0	9229.0	14413.0	2320.0	44.7	16.0
1980	4759.0	10136.0	14895.0	1872.0	39.3	12.5
1981	5185.1	13214.0	18399.1	2954.0	56.9	16.0
1982	4404.5	14871.5	19276.0	3719.0	84.4	19.2
1983	4712.0	16174.0	20886.0	1895.0	40.2	9.0
1984	5949.0	20031.0	25980.0	2675.0	44.9	10.2
1985	6042.0	26331.0	32373.0	3318.0	54.9	10.2
1986	11832.0	40279.0	52111.0	14233.0	120.2	27.3
1987	16076.0	61836.0	77912.0	18313.3	113.9	23.5
1988	19335.0	96925.0	116260.0	31467.3	162.7	27.0
1989	22696.0	118552.7	141248.7	42735.7	188.2	30.2
1990	25354.0	145643.0	170997.0	50616.4	199.6	29.6

Sources: BOT (1982) Tanzania: Twenty Years of Independence (1961-1981) A Political and Economic Performance, Dar es Salaam

URT, Economic Survey, Various Issues, Dar es Salaam

Notes:

Dexp = Development Expenditure (m TSh)
Rexp = Recurrent Expenditure (m Tsh)
Toexp = Total Expenditure (m Tsh)
Extfin = External Finance (m Tsh)
Shaxdex= Share of External Finance in Development Expenditure (%)
Shaxtx= Share of External Finance in Total Expenditure (%)

It is evident from Table 1 that both the share of external finance in total government expenditure and the share of external finance in Tanzania's development expenditure have all increased significantly since the early 1960s to the mid 1980s. While for example during the 1961/62 period, the share of external finance in development expenditure was nearly 28 per cent, by 1985/86, this share had increased to over 50 per cent.

Similarly, the share of external finance in Tanzania's total expenditure had increased significantly during the period under consideration. For example, in 1961, this share was 5 per cent but increased fourfold to over 20 per cent in 1977. By 1985 it had declined to 10.2 per cent.

Like most other LDCs, Tanzania has received substantial amounts of foreign capital flows with the aim of utilising these flows to generate higher income growth rates so that in the future, dependence on capital flows would be minimised.

Contrary to this expectation and performance of capital flows, Collier (1987), among others who have commented on the impact of aid performance to Tanzania, has observed that, in the economics of aid, Tanzania in particular has received more aid per capita than any other LDC in the Sub Saharan Africa (SSA), but ironically, its economic growth performance has been among the least successful. As Collier puts it, "Either it is **suis generis** or it conveys a disturbing message" (Collier, 1987, p.1).

Despite being such a central issue in Tanzania's development, aspects related to the performance of foreign capital flows to Tanzania have received marginal attention by academicians in the sense that very little is, up to this time, known on the impact of capital flows on her saving, investment and income growth of this country. It is often claimed that Tanzania has received more aid per capita than most other SSA countries but her economic performance has been poor. Thus researchers ought to include this country as an important observation in their analysis in an effort to investigate why the effectiveness of foreign capital flows directed to Tanzania has been low.

Admittedly, there exists some few studies, including those by Mjema (1985), Wangwe and Skarstein (1986)[8] as well as some sectoral studies like those by Lele (1987), which have examined the impact of foreign capital flows on Tanzania. However, the studies have focused more on the impact of the flows on manufacturing and agricultural sectors alone but have fallen short of examining the impact of the capital flows on the Tanzanian economy as an entity.

Even those few studies that have attempted to examine the impact of capital flows on savings and investment have examined the impact of only grants and "soft" loans in the economic growth of Tanzania (Cf Mjema, 1985). Furthermore, they have tended to cover relatively short periods of time, mostly singling out the period of the 1970s and early 1980s for analysis.

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8 R.Skarstein and S.Wangwe (1986) analyse the importance of foreign aid in the manufacturing sector in Tanzania particularly during the 1970s.

1.3 Significance of the Study

Three factors make the need for an inquiry into the impact of the foreign capital inflows in the economy as a whole necessary. First, Tanzania is one among many other LDCs which have consistently argued in international organisations and forums for more resource transfers and at concessional terms from developed to less developed countries.[9] While there are mixed experiences so far for the results of this call in different LDCs, data provided by international organisations show that Tanzania has been among the few LDCs which have received a substantial increase in capital flows and at favourable terms with the objective of helping her to ease the constraints to development and thereby promote growth. Thus, the need for undertaking an examination of the performance of the so far disbursed capital flows on her economic development is, at this point in time, called for.

Second, an examination of Tanzania's development expenditure as seen from Table 1 reveals that a greater proportion of such budgets has, from the time of her independence in 1961 up to the current period, been financed significantly by foreign sources. Indeed, evidence cited in various Economic Surveys in Tanzania, is bound to show that Tanzania has in many respects relied to a considerable extent on foreign assistance for her development.

The third factor necessitating the examination of the impact of capital flows relates to the negative aspect of capital flows, that is, the

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9 See for example the Brandt Report (1984).

accompanying debt problem that inevitably follows after a country has contracted loans from abroad. It is important to understand that except for grants, all other forms of loans have to be re-paid by the recipient to the creditors. The re-payment includes not only the principal, but also, interest.[10] Given the favourable terms which were attached to loans to Tanzania, debt problems should not have arisen. However, the country's capacity to service her maturing debt obligations was constrained, as is shown in Chapter IV, by declining export earnings and thus the debt problem, surfaced. The question to be addressed here is, to what extent has the debt problem affected the effectiveness of capital flows to Tanzania.

The current study aims essentially at filling the above identified gaps by examining the effects of capital flows to Tanzania in the 1961-1985 period.

1.4 Statement of the Problem

For the sake of clarity and systematic analysis the period under investigation, that is the period from 1961 when Tanzania gained her independence to 1985, can conveniently be divided into two sub-periods. The first sub-period extending from 1961 to mid 1970s was characterised by a modest economic growth accompanied by large investments and favourable balance of payment situations.[11]

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[10] An analysis of the state of the Tanzanian economy from the time of independence to the early 1980s is made by Lipumba et al (1984). Also See BOT (1982).

[11] See N.Lipumba et al (1984).

The second sub-period ranging from the mid 1970s to the mid 1980s has witnessed Tanzania being faced by a serious economic crisis, perhaps the worst of its kind since independence. The crisis has manifested itself in such things as foreign exchange problems. Other signs of strain in the economy particularly during the late 1970s and mid 1980s were inflation (reaching up to 32 per cent in 1985), accumulation of debt service payments and shortage of spare parts.

Some efforts are being made to analyse the crisis in an attempt to provide realistic solutions. Studies are being carried out in various sectors of the economy to analyse the cause and to provide cures for the crisis. To complement the efforts made within Tanzania, the country has received capital inflows from various countries and agencies. As is evident in Table 2, grants in particular, especially during the second half of the period under investigation, have been an important factor in the financing of Tanzania's development budget.

Table 2: Foreign Grants in Tanzania's Development Budget

Year	Development Expenditure (Tsh m)	Grants (Tsh m)	Grants/Devexp (%)
1961	132.8	2.5	1.8
1962	143.5	2.7	1.8
1963	145.3	1.5	1.0
1964	203.9	2.0	0.9
1965	230.0	2.4	1.0
1966	294.4	2.3	0.7
1967	344.1	2.0	0.5
1968	460.5	3.7	0.8
1969	631.0	4.0	0.6
1970	886.9	4.0	0.4
1971	884.4	49.0	5.5
1972	763.0	71.0	9.3
1973	1142.0	214.0	18.7
1974	2225.0	578.0	25.9
1975	2252.0	946.0	42.0
1976	3244.3	1002.0	30.8
1977	3331.0	1116.0	33.8
1978	4750.2	1646.0	34.6
1979	5184.0	4659.0	89.8
1980	4759.0	3908.1	82.1
1981	5185.1	2203.0	42.4
1982	4404.5	3502.5	79.5
1983	4712.0	4670.0	99.1
1984	5949.0	5100.0	85.7
1985	6042.0	5200.0	86.0
1986	11832.0	5100.0	43.1
1987	16076.0	5300.0	32.9
1988	19335.0	5810.0	30.0
1989	22696.0	6800.0	29.9
1990	25354.0	7200.0	28.3

Sources: BOT (1982) Tanzania: Twenty Years of Independence(1961-1981) A Political and Economic Performance, Dar es Salaam
URT, Economic Survey, Various, Dar es Salaam

Notes: Devexp indicates Development expenditure

The share of grants in Tanzania's development expenditure for a ten year period from 1961 to 1971 was relatively low; averaging at less than 2 per cent for the entire period. However, this share increased significantly reaching up to 93 per cent in 1983. By 1985, this share was 86 per cent.

What remains to be closely examined, and which forms the thrust of this study is; to what extent the capital flows have helped to increase Tanzania's saving, investment and income growth rates. To recapitulate, this study seeks to quantitatively analyse the impact of foreign capital inflows in the savings, investment and income growth process in Tanzania for the 1961-1985 period. This analysis will lead us into answering the following four basic questions, namely;

(a) What was the impact of the foreign capital flows on the domestic saving efforts during the 1961-1985 period?

(b) Did the incoming flows affect positively or negatively Tanzania's investment effort?

(c) What was the impact of the flows with respect to the growth rate of income and the per capita income growth rates?.

(d) Following the impact of the foreign capital flows on (a), (b) and

(c) above, what inferences can be drawn on the overall impact of capital flows in the development process of Tanzania?

1.5 Theoretical Framework

Though it has almost become fashionable to claim that external capital flows will positively forster economic growth of a less developed country, the debate over the impact of foreign finance on the recipient's growth, as will be shown in Chapter III, is far from being over.

Theoretically, arguments which support this claim have their basis and draw most of their support from the two-gap model. Briefly, the argument in the model is that foreign capital flows have the capacity to bridge the larger of either of the saving or foreign exchange gaps said to exist in the majority of LDCs.[12] Thus, a look at the occurrence of some of these gaps becomes necessary and we start with the following notations.[13] We therefore let;

Q	=	Gross domestic product
Ct	=	Total consumption
Cp	=	Private consumption
It	=	Total investment
Ip	=	Private investment
Sd	=	Total domestic savings
Sp	=	Total private savings
Ge	=	Total government expenditure
Tn	=	Total net taxes
Me	=	Expenditure on imports

[12] E.Bacha (1990) and L. Taylor (1990) explore the possibility of occurrence of more than two constraints to growth in LDCs.

[13] The approach used here is almost similar to that used by R.Skarstein and S.Wangwe (1986).

Xe = Exports

The point of departure leading to the identification of the said saving and investment gaps is the definition of national income identity shown in equation (1) as:

(1) Me + Q = Cp + Ip + Ge + Xe

If we assume that private consumption (Cp) is financed solely by the income earned domestically then:

(2) Cp = Q - Sp - Tn

When equation (2) is substituted into equation (1) and re-arranged then;

(3) (Ip-Sp) + (Ge-Tn) = Me-Xe

Equation (3) says that the import surplus (appearing on the right hand side of the equation) which is financed by foreign capital in either loans or grants can be used to bridge the gap between private investment and private savings or between government revenue and government expenditure.

The national income identity equation (1) can, likewise be used to show the growth repercussions of foreign capital flows. This can be demonstrated by re-writing the identity equation (1) in simple terms as:

(4) Q = Ct + It + Xe - Me

We further let total domestic savings equal gross domestic product less consumption, i.e.

(5a) Sd = It + Xe - Me

or,

(5b) It = Sd + Me - Xe

The growth implications of foreign capital flows become apparent when the left hand side of equation (5b) is first multiplied by change in income (DQ) and the whole expression is divided by income (Q) as follows:

(6)(DQ/Q) (It/DQ) = (Sd/Q) + (Me-Xe)/Q

Where:

DQ = Change in growth domestic product

DQ/Q = growth rate of income

It/DQ= incremental capital output ratio (icor)

The essential result of equation (6) is that, largely because of the capital flows, the rate of domestic income growth (DQ/Q) times the incremental capital output ratio (It/DQ) will increase by the amount equal to the share of foreign capital in the gross domestic product, that is, (Me-Xe)/Q. Two conditions are given for this to happen. The first restriction is that the incoming flows should not result in lowering the domestic saving rate (Sd/Q). The other condition is that the flows should not result in the increase in the incremental capital output ratio (icor). However, a detailed follow-up of the arguments for and against foreign capital flows will be presented later in Chapter III.

1.6 Hypotheses

Four working hypotheses which are related to the impact of foreign capital flows on the saving-investment process of Tanzania are adopted by this study as follows. It is hypothesized herein that,

1.6.1 The availability of capital flows to Tanzania in the 1961-1985 period substituted for the domestically available savings. That is, during the period under investigation, foreign capital flows were negatively related to the domestic saving. Translated into mathematical notation, this hypothesis reads as: $(DS/Y)/(DF/Y)<0$. Where DS, DF and Y represent change in savings, change in foreign capital flows and the level of income respectively. In literature (Papanek, 1972, Bowles, 1987 and Snyder, 1990) the assumption is that where capital flows from abroad have been used to supplement consumption, they have tended to substitute for the domestically available savings. This is, however, just one of the possible explanations that can account for the inverse relationship between foreign capital and domestic savings in Tanzania.

1.6.2 The availability of foreign capital flows to Tanzania during this period tended to foster positively the investment effort of this country. In mathematical notations, this hypothesis reads as $(DI/Y)/DF/Y)>0$. Where DI, DF and Y represent change in investment, change in foreign capital flows and income respectively. This hypothesis might be plausible as most of the investment in Tanzania particularly those

which took place during the 1970s and early 1980s were supported by foreign capital flows.

1.6.3 Foreign capital flows were positively related to the growth of income in Tanzania. That is (DdY/Y)/DF/Y)>0. Where DdY, DF and Y represent, change in income growth, change in capital flows and income respectively.

1.6.4 The net impact of foreign capital flows on the development process of Tanzania is positive. This is hypothesis also plausible if the positive impact of capital flows on both the investment rate and the growth rate of income was large enough as to off-set the negative impact of the foreign capital flows on the savings rate.

1.7 Scope and Limitations

This study covers the 1961-1985 period and is mainly pre-occupied with the impact of foreign capital flows on the saving-investment process in Tanzania during this period. The study recognises, however, that foreign capital inflows continued to be disbursed to Tanzania even after 1985, and thus, continued to influence the economic development of Tanzania.

The 1965-1985 period has been singled out for analysis due to the fact that it represents an era in the development process in Tanzania where it is claimed (cf World Bank, 1989) that donors and other agencies were particularly interested or sympathetic to the cause of Tanzania's development. Coulson (1982) claims that most

donor governments and aid agencies which gave assistance to the country during the late sixties and late seventies were impressed by Tanzania's equitable income distribution policies.

The other limitation is that the impact of the flows is confined to the savings, income and investment process alone. It is widely understood that foreign capital flows to a recipient can have other impacts (for example political and social) besides the ones we are currently examining, but the methodology specified in this study does not enable us to capture those impacts, important as they might be, and therefore falls outside the scope of this study.

The third limitation concerns data availability, sufficiency and consistency. Needless to mention, this is a problem which is neither particular to Tanzania nor to this study, but is felt in most LDCs and by other studies. Given this data background, the accompanying result have to be cautiously interpreted.

1.8 Study Outline

The study is organised as follows. In Chapter II, trends in foreign capital flows are shown whereby, among other contents, highlights of the various forces that were at play and which forced the government to rely so heavily on foreign capital are presented. In Chapter III, by way of literature review, presentation of the debate on the impact of capital flows on a recipient's saving investment and income growth is made. This presentation acts as a link to the inquiry in Chapter IV, of the experience of Tanzania during the period under review.

In Chapter V, a discussion of the simultaneous equation model which has been used in this study is made. It is also in this Chapter that econometric results obtained from the application of the model to the Tanzanian context are presented. Finally, in Chapter VI presents the major findings of our study as well as the policy implications and recommendations from our study.

CHAPTER II

TRENDS IN FOREIGN CAPITAL FLOWS TO TANZANIA: 1961-1985

2.1 Introduction

The aim of this chapter is to analyse some trends in the flow of foreign capital flows to Tanzania during the 1961-1985 period and its significance in the financing of various government development plans in Tanzania.

To set the trend, we begin by analysing the state of Tanzania's economy for a period from 1961 to early 1970s a period where the government's aspirations to rid the country of its underdeveloped characteristics, necessitated the need for foreign assistance, for, as may be recollected from the preceding chapter, the available domestic resources within Tanzania during that time, could not sustain the stated government development aspirations.

2.2 Some Basic Structural Features of the Tanzanian Economy in the 1960s

2.2.1 Economic Activity and the Role of Foreign Capital Flows

When Tanzania (then known as Tanganyika) became independent from Britain in 1961, her basic economic features were not different from those of other former British colonies. The country inherited from her colonial past, a dependent economy whose structure favoured the production and export of agricultural goods to European markets.[14]

Apart from diamond mining, a large part of the export sector was made up of either un-processed or semi-processed products. From 1961 to 1964 for example, over 60 per cent of Tanzania's GDP was composed of primary products.[15] Secondary activities which included manufacturing, processing and construction, formed about 13 per cent of GDP while the rest was tertiary activities. Industrial activities were at a very low and rudimentary level. Skarstein and Wangwe (1986) show that in 1961 it was estimated that there were in Tanzania, only 220 industrial establishments employing, on average, about 10 people and each with an average assets worth not exceeding an estimated value of Tsh 200000.[16]

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[14] For a detailed discussion of the structure of production in Tanzania during the early period of her independence see for example C.Pratt (1976).

[15] See for instance BOT(1982) Tanzania: Twenty Years of Independence (1961-1981):A Political and Economic Performance .

[16] R.Skarstein and S.Wangwe (1986).

Most of the principal cash earning agricultural crops like sisal, coffee and tea were grown in plantations set up and organised with the help of foreign private capital flows.[17] The owners of these plantations (mainly European settlers, Indians and some multinational companies) injected foreign private capital to ensure a smooth operation of the activities, and the profits thus obtained from plantations and other undertakings were sent back to the issuers of capital.[18] Financial institutions within the country like banks, etc. which were, during that time controlled by foreigners, facilitated this outflow of capital. Similarly, the dominance of foreign private capital flows during this period was also widespread within the industrial sector.[19] Suffice it to mention at this juncture that it has been claimed that during the early years of the country's independence, there was a net capital outflow from Tanzania.[20]

2.3 Early Government Objectives and Reliance on Foreign Capital

Immediately after independence, the Tanzanian government adopted economic policies aimed at achieving two goals. The first objective was to attempt to achieve a high per capita income level (estimated in 1964 at Tsh 462). The second objective was to struggle to attain self-sufficiency in middle and high level manpower

17 See C.Pratt (1976).
18 See C.Pratt op.cit.
19 This is also discussed in J.Rweyemamu (1973).
20 See J. Rweyemamu op.cit.

requirements. The emphasis was to try to change the inherited low standard of living which prevailed in the country.

2.3.1 Objectives Aimed at Changing the Structure of Production

Having won her independence in December 1961 the government's desire was to achieve high economic growth-rates and ultimately attain better living conditions for the Tanzanian people.[21] However good the intention were, for a newly independent and poor nation like Tanzania was during that time, any attempt to eradicate what the government considered to be social evils like poverty, ignorance and diseases, meant directly or indirectly accepting foreign financial assistance. The Tanzanian government was able to solicit,and got, foreign capital resources from a number of countries and donor agencies.

The government's aims of achieving high growth rates were at first broadly stated in the Three Year Development Plan (TYDP) which was put in operation during the 1961/62-1963/64 period. This was prepared with the assistance of World Bank experts.[22] It was envisaged in the Three Year Plan that the country would attain a growth target of more than 5 per cent throughout the plan period.

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21 The objectives of the Tanzanian (then Tanganyika) government were broadly stated in the Three Year Development Plan (1961/1962 - 1963/1964).

22 See URT(1962) Development Plan for Tanganyika 1961/1962-1963/1964,Dar es Salaam.

Specific objectives of the plan included among other things, the development of agriculture and water supplies, development of secondary education and development of the communication infrastructure. But domestic resources alone in Tanzania could not ensure the success of this plan, thus ushering in an epoch where foreign capital would play a significant and decisive role in Tanzania's development.

2.3.2 The Role of Foreign Capital Flows in Tanzania's Development Plans

The financing of the Three Year Development Plan cited above depended, to a large extent, on the availability of foreign capital. This is because, out of the estimated total cost of British pounds 19m (nearly 80 per cent of the funds) was to come as assistance from abroad in either grants or loans.[23]

The composition of the 80 per cent foreign sources of financing the plan was such that 32 per cent of the funds were expected to be made available in grants while 48 per cent of the funds were to come in as loans. Of the 20 per cent amount of the funds that were to be raised domestically for financing the plan 80 per cent (equivalent to British pounds 4m) was to be raised through internal borrowing while the remaining 20 per cent of the domestic funds (nearly British pounds 1m) was envisaged to be raised through contributions made by local authorities.

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23 See for example BOT(1982) op. cit.

At the end of the Three Year Development Plan in 1964, Tanzania's First Five Year Development Plan (1964/65-1969/70)[24] was drawn, this time with the assistance of French planners.[25] Like in the preceding plan, the aim of the government was to achieve higher growth rates of more than 5 per cent and akin to its predecessor i.e., the Three Year Plan, the First Five Year Plan (FFYDP) was also drawn with much anticipation that foreign capital flows would be forthcoming to finance it.

According to its planners, the total development expenditure in this plan was estimated to be Tsh 4920m. Out of this total amount, about Tsh 2608m, corresponding to over 52 per cent of the development funds were to be raised from foreign sources while Tsh 2312m (equivalent to nearly 47 per cent) of the development funds were to be raised from domestic sources. Indeed, the availability of foreign capital was expected to perform an important role in financing Tanzania's capital formation. For example, it was planned that nearly 52.8 per cent of the total fixed capital formation would come from the public sector. Correspondingly, the private sector was to finance about 47.2 per cent of total investment.

The central government development expenditure, which forms a major part of the public sector, was according to this plan, to be financed mainly from foreign sources. To be specific, about 78 per cent of the government development expenditure was to come from

24 BOT (1982) op. cit.
25 BOT(1982) op.cit.

external sources while only 22 per cent of these funds were to be raised from domestic sources.

The Tanzanian government's apparent heavy reliance on foreign capital for development purposes was explained by Rweyemamu (1973) as being caused by what he described as "**euphoria of goodwill in international relations typical of the early period of independence**".[26] It will later be argued that contrary to the expectations about the availability of assistance to Tanzania, most of the planned foreign capital resources were never realised and this affected to a certain extent the formulation of the Second Five Year Development Plan (SFYDP).[27]

Through the Second Five Year Plan, the Tanzanian government still aimed at attaining higher growth rates but unlike in its two predecessors, the SFYDP aimed at development through self-reliance, as stated in the Arusha Declaration in 1967.[28] To this effect, the SFYDP envisaged domestic resources to be instrumental in the socio-economic development process and this called for maximum mobilisation of these resources especially manpower resources.[29]

In sharp contrast to the FFYDP, and most likely because the planned foreign capital resources were not materialising as anticipated, the SFYDP attempted to reverse the role foreign capital flows were expected to perform in financing the plan. For example, 56.8 per cent of the government development expenditure was to be

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26 See J. Rweyemamu op.cit.
27 See BOT (1982) op.cit.
28 See J.K.Nyerere (1968) Freedom and Socialism Oxford University Press.
29 See also J.K.Nyerere (1968) op.cit.

financed from domestic sources and the rest (43.2 per cent) was expected to come from abroad (as loans and grants). The role of the private sector in investment was diminished while that of the public sector was given importance through the formation of parastatals responsible for mobilisation of savings and investment.[30]

Contrary to the expectations of the government with respect to the performance of the institutions charged with saving and investment mobilisation, their performance has not been impressive.[31] Consequently, during the second sub-period under consideration, i.e., the crisis ridden period, foreign capital was needed to prevent the Tanzanian economy from collapsing.

Beginning with 1974, Tanzania faced a food crisis following a spell of drought in 1973 and was forced to import food supplies. In addition, the country was hit by a five fold increase in the oil prices following an upsurge in the prices of oil world-wide. These two shocks depleted the country's foreign exchange reserves and due to the aforementioned imbalances, the Third Five Year Development Plan (TFYDP)[32] which was to immediately follow the SPYDP had to be delayed[33] and was instead replaced by emergency programmes which were also formulated with the anticipation of foreign loans and grants.[34]

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30 See BOT (1982) op.cit.
31 See among others N.Lipumba and N.Osoro (1990).
32 URT (1976) Tanzania : Third Five Year Plan for Economic and Social Development, 1976-1981 Dar es Salaam.
33 BOT (1982) op.cit.
34 See Green et al (1982).

Even when it was eventually put into operation, the Third Five Year Development Plan (TFYDP) was to depend also on foreign capital, especially where government expenditure on investment was concerned. That for example, nearly 62 per cent of government investment expenditure was to be financed from loans and grants from abroad, reflected the need by the Tanzanian government to establish an industrial base, and is thus not surprising that there was a heavy investment in large scale projects which required correspondingly large financial investment outlays from abroad.[35]

In this section we have discussed, by way of various plans, the role that foreign capital was assigned to play in Tanzania's economic development. The assumption being that the assistance, either in loan or grant form would be available. But as the following sub-section shows, there were some developments in Tanzania's relationship with some donors which, in one way or another, affected the inflow of foreign capital to Tanzania. But first, in section 2.4 we discuss major trends in the flows of assistance to Tanzania from bilateral as well as multilateral sources. Then in section 2.5 some factors which negatively affected the supply of foreign capital from some bilateral donors are shown.

35 BOT (1982) op.cit.

2.4 Trends in Foreign Capital Flows to Tanzania

In Tanzania, just like in most other African countries, foreign capital resources have been obtained from two broad categories namely; bilateral as well as multilateral sources. In table 3 the contribution of assistance to Tanzania made by five major bilateral donors is shown.

Table 3: Total (net) Foreign Capital flows to Tanzania from Major Bilateral Donors (US$m)

Year	Germany (1)	Holland (2)	Sweden (3)	U.K (4)	USA (5)	Total of the 5
1960	-	-	-	34.04	1.06	35.10
1961	0.03	-	-	115.55	17.12	132.67
1962	0.47	-	0.07	126.94	30.30	157.78
1963	9.55	-	0.62	79.45	13.70	103.32
1964	30.67	-	3.59	82.35	20.13	137.24
1965	13.90	1.10	5.40	59.20	30.53	110.20
1966	19.86	-	-	37.78	29.41	87.05
1967	11.78	-	7.01	8.76	33.76	61.31
1968	11.25	-	10.35	10.19	36.7	68.71
1969	35.64	0.31	26.22	4.21	34.39	62.17
1970	4.83	3.82	20.23	20.14	25.86	74.88
1971	16.38	4.17	30.41	16.43	27.25	94.64
1972	15.40	9.25	42.58	60.73	17.50	145.46
1973	15.09	15.54	68.71	25.45	19.40	143.19
1974	19.82	19.08	60.89	6.92	17.70	124.41
1975	44.94	30.27	87.21	3.06	52.55	218.03
1976	41.21	43.27	80.58	42.53	51.81	259.40
1977	49.84	65.10	82.03	97.61	42.86	277.44
1978	78.62	78.70	79.69	41.80	17.39	296.20
1979	95.76	103.55	115.32	65.67	24.12	404.42
1980	81.27	88.67	87.22	146.52	28.0	431.68
1981	65.67	70.76	83.35	101.54	29.85	351.77
1982	63.22	62.41	82.22	31.74	26.24	265.83
1983	39.77	38.85	71.68	25.17	2.70	196.17
1984	53.88	41.06	58.03	27.08	23.18	203.23
1985	56.51	40.08	68.44	26.72	21.14	212.89

Source: P. Collier (1987) p.27

It is evident from Table 3 that at the time of Tanzania's independence in 1961, Britain was a major source of foreign capital Tanzania. This observation is hardly surprising if Tanzania's colonial past is taken into account.

In 1961 for example, Britain was extending to Tanzania over 85 percent of the total (of the 5 major donors) capital flows. By 1985 however, apart from Britain, other countries like Sweden, Germany, Holland and the USA were also extending their assistance to Tanzania. It is observed from table 3 that by 1985, the amount of assistance Britain was extending to Tanzania was smaller compared to that extended by countries like Sweden, Holland or Germany.

2.4.1 Bilateral Versus Multilateral Assistance to Tanzania

There exists a variety of explanations as to why Tanzania was able to attract foreign assistance from such a number of countries.[36] To recapitulate what was stated earlier, Coulson (1982) attributes it to the more equitable income distribution and rural development policies undertaken by the Tanzanian government in the late 1960s and early 1970s. These policies, as the World Bank report (1989) argues, attracted the sympathy of multilateral donors.[37]

Whatever explanation(s) might be advanced to explain the flow of assistance to Tanzania during this period, it is true that a number of countries were willing to extend their assistance to Tanzania. By 1978 for example there were fifteen different foreign assistance donors invited by the country to, not only chart out development plans for a selected number of regions, but also to provide financial assistance to the respective regional plans.[38]

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36 See Coulson (1982).
37 See BOT (1982) op.cit
38 A. Coulson (1982) op.cit.

2.4.2 Loan Versus Grants in the 1961-1975 Period

The composition of foreign loans and grants received in Tanzania during the period under investigation is shown below in Table 4.

Table 4: Net Foreign Capital Disbursed to Tanzania 1961-1985

(Tsh m).

Year	Loans	Grants	Other	Total
1961	38.8	2.5	82.0	123.3
1962	51.5	2.7	90.0	144.2
1963	59.0	1.5	98.0	158.5
1964	64.0	2.0	96.6	162.6
1965	82.0	2.4	102.0	186.4
1966	103.0	2.3	140.0	245.3
1967	119.0	2.0	185.0	306.0
1968	100.7	3.7	155.4	259.8
1969	170.4	4.0	227.3	401.7
1970	289.1	4.0	64.6	357.7
1971	340.0	49.0	53.3	442.3
1972	703.6	71.9	21.3	796.8
1973	692.9	214.0	0.0	906.9
1974	984.9	578.0	428.0	1990.9
1975	1719.0	946.0	230.0	2895.0
1976	889.0	1002.0	201.0	2092.0
1977	1449.0	1116.0	320.0	2885.0
1978	1137.0	1646.0	0.0	2783.0
1979	1151.0	4659.0	808.0	6618.0
1980	1305.0	3908.1	928.0	6141.1
1981	2104.0	2203.0	956.0	5263.0
1982	2109.0	3502.5	1516.0	7127.5
1983	1249.5	4670.0	7720.0	13639.5
1984	1549.5	5100.0	5118.3	11767.8
1985	1336.8	5200.0	7069.8	13601.6

Sources: URT, Economic Survey, Various, up to 1987
BOT (1982) Tanzania: Twenty Years of Independence, 1961-1981 A Political and Economic Performance., Dar es Salaam

During the 1961/62 period, Tanzania received a total of Tsh 123.3 m in both loans and grants from bilateral as well as multilateral sources. The bulk of this amount consisted mainly of bilateral loans from Britain, accounting for nearly 52 per cent of the total capital flows received in that time. Grants from both bilateral and multilateral sources totalled Tsh 2.5 m and represented only 2 per cent of the total foreign capital flows. In addition, out of the Tsh 2.5 m received in grants, nearly 90 per cent (equivalent to Tsh 2.3 m) came from Britain.

Table 4 shows that for a period of more than a decade, (1961-1973) bilateral and multilateral loans from various sources formed a major component of the foreign capital flows to Tanzania. The level of grants from these sources on the other hand, experienced little change from the initial Tsh 2.5 m that was given to Tanzania in 1961. At best, from 1961 up to 1970, the level of grants received increased to Tsh 4.0 m in 1970 compared to Tsh 1.5 m worth of grants received in 1963.

In sharp contrast to the observed trend in the flow of grants, foreign donors especially bilateral ones increased the flow of capital but in the form of loans during the same period of time. While for example at the beginning of this period, bilateral loans to Tanzania amounted to Tsh 18.8 m, by 1971 such loans had increased to Tsh 23.1m nearly 8 times the amount of assistance made to Tanzania in the form of bilateral grants.

2.4.3 Loans Versus Grants in the 1975-1985 Period

As can be visualised from Table 4, the period extending from 1975 to 1985, represents a period where there was a shift in emphasis away from loans and towards the provision of assistance in the form of grants, and as will become apparent in the following section, this switch of emphasis towards grants was caused partly by a response of many donors who were reacting towards an economic crisis which was unfolding in Tanzania. Thus, in 1976 the total volume of grants to Tanzania amounted to Tsh 1002m and exceeded the total volume of loans valued at Tsh 889m. Out of these grants, about 89 per cent of them originated from bilateral sources.

Though in the subsequent two years, i.e. 1977 and 1978 the total loans received were enough to outweigh the volume of grants, from 1979 to 1985 the level of grants exceeded the volume of loans. In 1985 for instance, a total of Tsh 1336.8m loans were received but this sum was only 20 per cent of the Tsh 6817.2m worth of grants received in the same year.

To summarise some of the observations made in this sub-section, it is apparent that for the period under consideration, Tanzania received both multilateral as well as bilateral assistance. Without underplaying the significant contribution of multilateral sources of foreign capital finance, it is observed that bilateral sources of finance contributed more to the availability of capital to Tanzania than multilateral sources.

A further look at these bilateral sources of capital reveals that while in the 1960s and up to the mid 1970s they made their capital available in the form of loans, for the period after 1977 up to 1985 their foreign capital was in the form of grants.

2.5 Some Variations in the Flow of Foreign Capital to Tanzania

During the 1961-1963 period, there were no significant interruptions in the flow of assistance to Tanzania. The resource transfers were aimed at specific projects (project assistance) due to the belief of some donors (including the World Bank) that assistance provided in this form would not be misallocated.

The period 1964-1985, however, saw some interruptions in foreign capital flows to Tanzania. The first of such shifts occurred between 1964 and 1965, while the other major drop in the flow of assistance to Tanzania was experienced in 1981.

There were in Tanzania, two separate events which took place between 1964 and 1965, one involving Britain, by then one of the largest foreign aid donors to Tanzania (cf Table 3) and the other involving former West Germany, also an important aid donor to Tanzania. As it will be evident later these events led to a significant reduction of foreign assistance from these donors.

In 1964, Rhodesia (now Zimbabwe) by then a British colony had declared a state of unilateral independence from Britain. Tanzania, being an active participant in liberation struggle, expected Britain to act and prevent Rhodesia from declaring unilateral independence.[39]

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39 BOT (1982) op. cit.

When Britain failed to act, Tanzania broke (temporarily) diplomatic ties with Britain. However, there was a cost to be paid, for, this action led to a substantial loss of initial flows of resource transfer and affected to a considerable extent the implementation of the First Five Year Development Plan (1964/1965-1969/70) which as the preceding analysis showed, depended on foreign capital.

The dispute over Zimbabwe made Britain to freeze a British Pound 7.5m interest free loan which had already been agreed upon but had not formally been signed. However, even after this loan freeze, Britain allowed the existing agreements with respect to capital flows to continue until their expiry dates. Since (as Table 3 shows) Britain was ranked high among donors of assistance to Tanzania, the withdrawal of its assistance put a lot of pressure on Tanzanian planners on how to finance the Five Year Development Plan.

A further interruption in the flow of assistance to Tanzania occurred between 1964 and 1965 and involved the concern by former West Germany over the establishment in Zanzibar, of East Germany Consulate. As the government of Tanzania resisted pressures from West Germany to close the consulate, West Germany responded by withdrawing part of her economic support to Tanzania. The drop in foreign capital resources to Tanzania experienced after 1981 was a result of the country's disagreement with conditionalities imposed by the International Monetary Fund (IMF)

It was perhaps the uncertainties such as the ones described above and the strings attached to foreign capital and the way foreign capital affected the implementation of the FFYDP that convinced policy makers as well as politicians to pursue an inward looking

policy to planning, which emphasised mobilisation of domestic resources through self-reliance.[40]

While it is true to argue that there was a significant drop in the volume of foreign assistance to Tanzania from the two sources following the mentioned events, the fall in the flow of assistance was off-set by an increase in the flow of assistance from Canada, Netherlands, the Scandinavian countries as well as from other donor agencies. It is true also, as the following sub-section reveals, that foreign capital resources that were made available to Tanzania through these sources were obtained at favourable conditions to this country especially when a comparison is made to other loan conditions given to other LDCs.

2.6 Loan Conditions to Tanzania Versus Other LDCs

The proper way of comparing loan conditions to Tanzania and conditions to other LDC recipients is to compare, not only the respective flows of assistance but also the loan terms subjected to these countries. Under the volume of assistance category, the comparison is often made between the inflow of grants and that of loans to Tanzania and to other LDCs. Countries that are in the Sub-Saharan Africa (SSA) are included for comparison because they face almost similar economic conditions to those facing Tanzania.

With regard to the loan terms, three loan conditions will herein, be compared. These are, the Average Maturity Period (AMP), the Average Interest Rate (AIR) and the Average Grace Period (AGP). The AMP is measured by the duration of time (in years) that elapses

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40 See among others J.K.Nyerere (1982) op. cit.

before a recipient is obliged to repay the borrowed amount. As is to be expected, the longer the period a loan is given to mature, the softer the loan is considered to be. This is partly because, recipients are assumed to be utilising the loans during this long period to develop their own enabling capacity.

The AIR on the other hand, is the interest rate charged on the loans by the creditors. In other words, it is the cost for borrowing from abroad, and the higher the interest rate becomes, the harder the loans are said to be and vice versa. Finally, AGP measures the extra time allowed for the loan recipient to repay the loans once the maturity period is reached. Since the AGP is closely related to the AMP the longer the AGP the softer the loan becomes.

Table 5: Volume of Capital Flows to Tanzania Versus SSA (US$m) (selected Years)

	LOANS			GRANTS			TOTAL		
	LDCs	SSA	TZ	LDCs	SSA	TZ	LDCs	SSA	TZ
1966	9399	1072	16	2838	812	1	10327	1885	17
1970	2745	1705	37	2862	1001	101	15607	2706	37
1974	27262	2365	92	3181	973	52	30443	3339	144
1978	64864	6828	246	4707	1710	230	69597	8549	476
1982	80931	8225	84	6761	2332	332	87692	10657	416
1986	102263	10552	98	8120	4130	641	110383	14682	739
1990	253270	20572	106	21123	7241	813	274393	27813	919

Source : World Debt Tables (1991) Washington

Notes: LDCs = Less Developed Countries
SSA = Sub Saharan Africa
TZ = Tanzania

Table 5 conveys the same message that was observed earlier under section 2.4 that starting with the early years of Tanzania's independence up to the mid 1970s the type of assistance that was received in Tanzania was in the form of loans. From the mid 1970s to the mid 1980s however, the country experienced increased inflows of assistance in the form of grants relative to the assistance in the form of loans.

It is observed in Table 5 that whereas grants formed a great percentage of the assistance to SSA, countries in the 1966-1974 period, the ratio of grants in the total assistance to SSA countries diminished thereafter. In its place, there was a continuous increase in the proportion of loans in the assistance to SSA countries.

In 1966 for example, out of the US $ 17m total capital flow to Tanzania, the bulk of it (i.e. US$ 16.4m or more than 80 per cent) was in loan form. Grants formed an insignificant proportion of the total capital flow to Tanzania. The situation had changed by 1982, where the country received a total of US $ 416m as resources from abroad.

Out of this total, US$ 84m equivalent to 20 per cent of the total flows was in loan form while US$ 332m was in grant form. The bias towards grants in the flow of foreign capital to Tanzania did not change in 1985 where the country received US$ 78.9m in loan form and US$ 408m as grants out of the total capital flow of US$ 486.9m.

Evidence provided by the World Bank[41] show that, the trend in the flow of capital resources to Tanzania during the 1980s was in sharp contrast to the flow of capital to other SSA countries.
For instance, it is apparent from Table 5 that donors preferred to extend their assistance to other SSA countries in the form of loans as opposed to the cited preference for grants observed for the Tanzania case.

In 1978 for, instance, SSA countries received capital flows totalling US$ 8549m. Grants formed less than 20 per cent of this total while the rest was in loans. By 1982, SSA received US$ 8325m in loan form out of a total capital flows of US$ 10657m received during that year. The rest of the assistance was in grants. Table 6 compares different loan conditions to different foreign assistance recipients.

41 See World Bank (1987).

Table 6: Loan Conditions to Tanzania Versus SSA (Selected years)

	A M P*			A I R*			A G P*		
	LDCs	SSA	TZ	LDCs	SSA	TZ	LDCs	SSA	TZ
1961	20	25	30	4	6	4	5	6	10
1970	18	18	30	5	6	4	5	6	10
1974	16	17	29	6	5	4	5	6	10
1978	14	16	30	7	6	4	4	4	7
1982	14	18	28	10	8	4	4	4	7
1985	13	17	24	8	7	4	4	4	7
1988	12	14	21	8	7	4	4	4	7
1990	11	12	17	9	8	4	4	4	6

Source: World Bank, up to 1991

Notes : AMP* = Average maturity period (years)
AIR* = Average interest rate (%)
AGP* = Average grace period (years)
LDCs = Less developed countries
SSA = Sub Saharan African countries
TZ = Tanzania

It is shown in Table 6 that foreign loan finance to Tanzania during the 1961-1985 period had relatively longer maturity periods, longer grace periods and relatively lower interest rates than most of the loans to other LDCs. When for example, the time given by donors to repay the loans is considered, it is evident that measured by the average maturity and average grace periods, creditors have shown greater flexibility in allowing Tanzania more time to repay the loans than the flexibility they showed to other recipients particularly those under the SSA category.

Table 6 shows further that on average terms, the maturity period for loans to Tanzania remained high (above 25 years) as

compared to the average maturity period for the loans to SSA countries which ranged between 25 years in 1966 to below 12 years in 1990.

According to Table 6, it is also evident that creditors showed willingness to give Tanzania additional time to pay her loans than the willingness shown in other SSA countries. The average grace period given to Tanzania was 10 years in 1966 which was nearly twice the time allowed to other SSA countries of 6 years.

By 1990, the average grace period given to Tanzania to repay the loans was 6 years while that for other countries in the SSA category was 3 years. The above observations tie well with similar observations made by Kjekshus and Mushi (1982), Collier (1987) among others that, compared to other foreign capital recipients in the SSA group, Tanzania did receive substantial amounts of foreign capital and at concessional terms favourable to her.

2.7 Summary

This chapter has reviewed major trends in the flow of foreign assistance to Tanzania during the 1961-1985 period and has made the following observations:

(a) Tanzania was a recipient of both bilateral and multilateral forms of foreign assistance.

(b) if foreign capital flows to Tanzania during this period are further categorised into grants and loan components, two distinct sub-periods emerge. In the first sub-period (extending from early 1960s to the mid

1970s), a large proportion of the assistance to Tanzania was in form of loans. The second sub-period (covering the mid 1970s to the mid 1980s) Tanzania received most assistance in grants form.

(c) the loans that were given to Tanzania during the period of our interest have been observed to have been extended at more 'favourable' terms than loans extended to other LDCs. In particular, it is observed that,

(i) loans to Tanzania had longer average maturity period than most of the loans to other SSA countries,

(ii) the average interest rate for loans to Tanzania was lower than the average interest rate for loans to SSA during this period and

(iii) even the average grace period allowed to Tanzania was relatively longer than the average grace period given to most of the countries in the SSA group.

From the observations above, one may conclude that if foreign capital flows are assumed to add to a country's productive capacity and hence have the potential to increase the recipients' welfare, such flows might have contributed positively to the saving, investment and income growth rates in Tanzania. However, the ultimate impact of foreign capital flows on these variables is still debatable and, as the following chapter shows, both theoretical and emperical evidences have been

used by different researchers to either support or oppose views concerning this impact.

CHAPTER III

REVIEW OF THEORETICAL ISSUES AND EXISTING EVIDENCE

3.1 Introduction

Literature that has dealt with the impact of foreign capital flows to a recipient's economic growth has, since the 1950s and up to the late 1980s passed through what can roughly be described as three broad phases.[42] In the first phase, which extends from the early 1950s to the late 1960s, most researchers, notably Rosenstein - Rodan (1961), Chenery and Strout (1966), had argued that the role of foreign capital was to add to the existing total stock of capital and other resources in LDCs and, ultimately enable the recipient countries to increase their growth rates. Basically, the argument oftenly presented during this phase was that foreign capital resources would help to remove constraints to growth said to exist in most LDCs.

The above hypothesis concerning the impact of capital flows on the recipient's growth, despite being what in literature has been described as "curiously naive", remained the conventional wisdom and largely unchallenged for most of the 1960s.

However, in the early 1970s, a period which marks the beginning of the second phase, witnessed an upsurge of literature opposing the aforementioned accepted wisdom whereby researchers

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[42] For an elaborate categorisation of these phases see P.Bowles (1987).

like Griffin (1970) and Griffin and Enos (1970) to mention just a few, began serious attempts to quantify the impact of foreign capital flows on the LDCs savings and income growth.

They observed among other things that, foreign capital flows were, in most recipient countries, negatively related to their domestic savings, and thus cast doubt over the ability of capital flows to raise growth in these countries. The argument advanced in most of the research work during this phase was that capital imports, rather than accelerating development, have, in some cases retarded it. It is further claimed in the economic literature that foreign capital flows are not distributed on the basis of economic need but rather on the basis of political expediency.

As Griffin and Enos (1970) put it,

> "how much a country lends to another country will not be determined by its need, or its potential, or its past economic performance, good or bad, or its virtue, but by the benefit it yields in terms of political support" (p.315).

Despite the popularity which the Griffin - Enos (1970) findings acquired in the 1970s, their work has, during the third phase (i.e., the period up to the late 1980s) been heavily criticised by researchers like Bowles (1987) and Krueger et al (1989), to mention just a few, on both methodological and empirical grounds.[43] The late 1980s to early 1990s have also witnessed an increasing concern by researchers who try to find the cause(s) of either a negative or the

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43 P.Bowles (1987) op.cit.

positive relationship between foreign capital flows on one hand , and the domestic savings in LDCs.[44]

This chapter attempts to survey the theoretical and empirical studies done on the impact of foreign capital inflows on, among other variables, the economic growth of LDCs in general and of Tanzania in particular.

It is sub-divided into three major divisions as follows. In section one we deal with the numerous concepts that are pivotal to this study. An attempt is made to define such concepts as capital flows, foreign aid etc., and the way these concepts are applied in this study.

Section two deals with the literature that has analysed the impact of foreign capital on the macroeconomic variables in recipient countries with particular emphasis on the effect of these flows on domestic savings in recipients.

Evidence that is provided by studies done on Tanzania is also provided in this section. Lastly in section three we summarise the debate on the impact of capital flows on LDCs growth. We point out the issues that seem to have been resolved and those aspects of foreign assistance to LDCs that require further research.

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44 See P.Bowles (1987) op. cit.

3.2 The Conceptual Framework: A Historical Note

Terms such as 'foreign capital flows', 'foreign assistance', 'aid' to the poor countries and other related terms which involve transfers of resources from one country (normally a rich country) to another (usually a poor country) as we understand them today, are concepts which have acquired widespread use after World War II. These concepts have their roots in the Marshall Plan where the United States of America (USA) transferred nearly US $ 17 billion equivalent to 1.5 per cent of US's GNP over a four year period to help in the reconstruction of the war - torn Europe.[45]

Economists like Eckaus (1970), Gillis et al (1987), Krueger et al (1986) among others, believe that capital inflow made available under the Marshall Plan was the force behind the quick recovery of Western Europe after the war. Cassen and Associates (1986) have asserted that the plan,

> "succeeded beyond the greatest hopes of its initiators. By the early 1950s, the Western European economies had achieved such large gains that they were able to maintain rapid rates of growth on their own efforts" (p.1).

Two elements of the plan are cited as being crucial for the recovery of the Western European countries.

One was the large amount of capital that was actually transferred to the affected areas. According to Krueger et al (1986) the foreign exchange constraint dominant in most western European countries during this time was released by capital flows made

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45 See for example Casen et al (1986) also Gillis et al (1987).

available under the plan, and was, to a considerable extent, responsible for the high productivity of the capital flows extended to these countries.

Second and perhaps most important, in most of the Western countries, there already existed coordinated plans to productively and efficiently employ the incoming capital. Indeed, the emergence of the Harrod-Domar model during the 1950s, whose theoretical framework emphasised that capital and its productivity were essential for a country's growth, underscored the significance of having elaborate plans for the usage of capital flows for development.

Most of the foreign capital flows to LDCs beginning with the early 1960s was provided by donors with the assumption that the recipients would have elaborate plans to effectively use the flows so that future flows would be, like in the Western European case, unnecessary. The missing link was, and continues, to be, however, that the amount of capital flows to LDCs is substantially small compared to the huge amounts of flows of assistance that were involved under the Marshall Plan.[46]

3.2.1 Some Basic Definitions

As explained in Chapter I, this study defines foreign aid in terms of grants and loans. However, different authors use the term foreign capital flows differently. The fundamental idea of aid as mentioned in section 3.2 above, is to transfer resources from one

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[46] See for example Krueger et al (1989).

(rich) country to another (poor) and on concessional terms. That is, terms that are more generous or softer than loans obtainable in the world capital markets.[47] Thus, naturally different authors have tended to come up with different results and conclusions regarding the impact of capital inflows in the recipient's growth rates whenever they have defined the foreign capital variable differently.

It is now agreed that for a foreign capital resource flow to be categorised as aid, it has to have three qualities. First, it has to be undertaken by official agencies. Second, it has to have, as one of its main objectives, the promotion of economic development and welfare in the receiving countries. Thirdly, it has to have a relatively large grant element.[48]

Using the conviction of "concessions" some aid agencies like the International Development Agency (IDA) simply look at the current account of a recipient (that is the difference between its imports and its exports) to mean that the resulting figure is capital inflow to that country. The rationale of defining capital flows this way being that some exports from LDCs find their way to developed countries' markets not through the usual market competition but through special concessions which can be described as assistance.[49] Most economists however define assistance to LDCs in terms of either loans or grants.

47 See Casen et al op.cit.
48 See for instance J.Pincus (1963).
49 This discussion is also found in the Brandt Report (1984).

3.2.2 The Case for Loans and grants

Though it is usual for researchers to define assistance to LDCs in terms of the current account deficit, other economists argue that, foreign capital inflows to LDCs should include only grants, that is, the situation whereby donors advance commodities or money to recipients and return payment is not expected.[50] The International Bank for Reconstruction and Development (IBRD) considers, along with grants, the case of ' soft ' loans in the definition of capital flows to recipients.

Softness of loans is described in terms of the interest on the loans advanced. Normally an interest rate of between 0-10 per cent attached to a loan is considered to be soft while loans with interest rates ranging above 10 per cent, will fall under the ' hard ' category. But there are other forms in which donors can make capital inflows available to recipients. They include among others:

(i) import support - under this arrangement, donors accept to advance capital to a recipient to meet certain import requirements necessary for its growth. Return payments may or may not be expected.

(ii) technical assistance - this form of assistance allows a donor to supply the recipient with personnel and equipment to specific agreed upon projects. Usually return payment is not expected under this arrangement.

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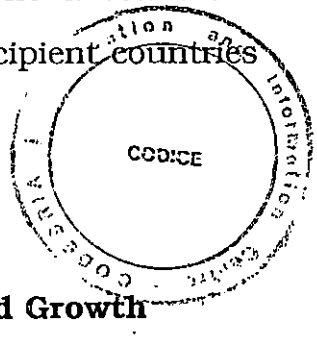
50 See also J.Pincus op.cit.

Though soft loans are also considered as assistance but a number of researchers do agree that the type of assistance that does not put LDCs on a future obligation to repay the funds should be categorised as aid. Rosenstein-Rodan (1961) for one, believes that inflows of grants to a recipient best fills the gap that might exist than any other form of capital flows due to the fact that recipients do not have to repay the extended assistance. But his analysis does not overlook the fact that some forms of capital if properly administered can serve the function similar to that of grants.

As he put it:

> "foreign assistance properly speaking, refers to those parts of capital inflows which normal market incentives do not provide. It consists of long term loans repayable in foreign currency, grants and soft loans, technical assistance and sale of surplus products for local currency payments".[51]

There is thus, a general agreement among economists that for poor LDCs, grants are better than loans. Also, whenever loans are extended under favourable terms, they could help recipient countries to remove the binding constraints to growth.



3.3 Foreign Capital and Transition to Sustained Growth

Before dealing with the debate surrounding the impact of capital flows on LDC's growth let us briefly examine some of the

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51 P.Rosenstein-Rodan (1961).

claims often made on the ability of the flows in helping the recipient to transform herself into a self sustaining economy.

With reference to foreign capital needs, a recipient country is said to have reached a state of self sustaining growth if foreign assistance is not required any longer.[52] While economic factors are necessary for a country to attain self sustenance, they are not sufficient conditions for this state to be achieved. This is because, even when a country is economically self sustained, a recipient can still acquire capital imports under the private foreign capital flows arrangement.[53]

Economists agree generally that there are certain features which characterise the underdeveloped economies[54] . The absence or shortage of skilled manpower, low saving and investment levels as well as widespread use of unproductive technology are often cited as characteristic features of many LDCs.[55] The struggle to transform these economies to a state of accelerated growth may be frustrated by the above bottlenecks. Foreign capital, especially when it is made available in non -repayable forms like grants and soft loans can help ease the constraints and allow recipients to transform to sustained growth.[56]

Apart from helping to ease the constraints, the productivity of foreign capital is also important in assuring that the recipient does

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52 See H.Chenery and A.Strout (1966) op.cit.
53 J.Bhagwati et al (1970).
54 For a discussion of the characteristic features of underdeveloped economies see H.Chenery and A.Strout (1966) op.cit.

55 H.Chenery and A.Strout (1966) op.cit
56 P.Rosenstein- Rodan (1961) op.cit.

not rely on foreign capital permanently. Productivity of an increment in external resources supplied to a developing country is measured by among other yardsticks, the corresponding increase in consumption or total income which it makes possible.[57]

In the long run however, the effectiveness of capital from abroad is measured by the extent to which the flows increase output and allocate the output so that the bottlenecks to the recipient's growth are permanently removed. The different experiences with foreign capital flows in different LDCs show that, except for the cited "successful case studies" mainly in South East Asian countries, this claimed smooth transition to sustained economic growth by the use of foreign capital flows, infrequently takes place.

There exists a number of studies which shows that a negative relationship exists between foreign capital and domestic savings in LDCs just as there are as many studies showing the existence of a positive relationship between these variables. However, very few studies have dealt with the causation aspects. Such causation issues are raised in this study, particularly in Chapter V.

To our knowledge, there exists comparatively, few studies which have dealt with the effects of foreign capital on investment in recipient countries. The few studies that exist show that there is a positive, though weak relationship between these variables.[58] It has been suggested that there is a positive relationship between foreign capital and investment in most recipients because a large amount of

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57 Casen et al (1986) op.cit.
58 See Casen et al (1986).

the investment in these countries has been financed by foreign capital.

3.3.1 The Main Debate

As already mentioned in Chapter II the debate on the impact of capital inflows on LDCs' domestic saving rate and subsequently growth rate, began as early as the mid 1960s. Up to this time, economists are still sharply divided on the effect of capital flows on the recipient's domestic saving and growth rates.[59]

The gist of the debate hinges on whether foreign aid can actually help recipient countries to overcome their constraints to growth as was postulated in most growth models. Expressed in other words, the question is whether, given the existing constraints to growth in most LDCs, foreign capital has the ability to fill these resource gaps and allow the recipient to move towards sustained economic growth. If it is assumed that foreign capital can perform this function, then such resources are said to be supplementing the resources available in LDCs to positively forster economic growth.

In the same vein, the other side of the debate is that, instead of supplementing the domestic saving resources, the availability of foreign capital resources help to substitute (or lower) these resources especially when most of the foreign capital resources are used for consumption purposes. Consequently, if one follows this alternative

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59 See P.Bowles op.cit.

reasoning, the result is that the availability of foreign capital resources might lower the growth in recipient countries.

3.3.2 Where Foreign Capital Stimulates Income Growth

The group of economists supporting the conventional view that capital inflows from abroad could help to stimulate domestic savings and investment make reference to the saving and investment constraints often observed in many LDCs. They argue that the inflows contribute to the potential availability of savings and investment to the recipient. In this way, it is urged, they ease these constraints. In other words, foreign capital inflows contribute positively to the income, saving and investment growth rates. Chenery and Strout (1966), Chenery and MacEwan (1967), Johnson (1967), McKinnon (1970), and Bacha (1990), among others, support this view.

Chenery and Strout (1966) in particular, supported by the Harrod-Domar model, were able to show that as long as foreign capital flows acted as a supplement to domestic savings of a recipient, there was the possibility that the flows would raise the growth rate of the recipient. Indeed, if the country's growth prior to the receipt of capital flows was : $g = s/k$ where g = growth rate, s = saving rate and k = incremental capital output ratio, then this growth could be increased to $g^* = (s+a)/k$ where $g^* > g$ and **a,** represent foreign capital flows as a percentage of GDP.[60]

60 This is one of the assumptions of the Harrod -Domar model.

This increase in growth rate was in turn, expected to raise incomes which would likewise raise the saving rates. The higher growth rate would become self sustaining and would eliminate the need for further injections of foreign capital.[61] In summary, the assumptions of the early literature on the positive impact of foreign capital flows were that, each dollar of foreign capital inflow would result, in an increase of savings and investment in recipient countries.

3.3.3 The Alternative View

As observed in the preceding section, from the late 1950s up to the late 1960s most economists were of the opinion that foreign capital flows would inevitably lead to the increased growth in recipient countries. Spearheaded by the theoretical work developed by Chenery (1966) most LDCs were in fact encouraged to "solicit and accept aid as rapidly as they could absorb it".[62]

It was Griffin and Enos (1970) and Griffin (1970) who first pointed out both the theoretical as well as the socio political surroundings which could cause the flows to be detrimental to the recipient countries.

Far from the assumptions of the two- gap model that foreign capital inflows would help to relieve a country's saving or foreign exchange constraints, and thereby permit the country a higher growth, these researchers claimed among other things that, increased

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61 H. Chenery and A. Strout (1966) op. cit.
62 H. Chenery and A.Strout op.cit.

foreign capital flows to LDCs could lead to a decrease in their domestic savings and thus, foreign capital might have a negligible or even harmful effects on the growth rate of recipients. In their own words Griffin and Enos (1970) stated that;

> "the regression results suggest that in general, an extra dollar of aid is associated with a rise in consumption of about seventy five cents and a rise in saving of about twenty five cents".[63]

This alternative view, which is in sharp contrast to the pro - foreign capital view presented above, is also shared by Rahman (1968), Griffin (1970), Weisskopf (1972), Papanek (1972, 1973), Henley et al (1980), Griffin (1985), Bowles (1987) and Collier (1987), among others. Their theory links the saving behaviour of LDCs not only to the level of income but also to the level of capital flows from abroad. They claim that once the inflows are made available, they substitute for the domestically available savings. The result of which is to have negative relationship with recipient's saving. Indeed, Weisskopf (1972), emphasises that;

63 Griffin K. and Enos J.(1970).

> "There are persuasive theoretical reasons for believing that an inflow of foreign capital should have a negative impact on domestic intentions to save. Foreign capital inflows represent an addition to the total supply of resources available to a country and thereby increases the possible magnitude of domestic expenditures. Any plausible utility function balancing the immediate benefits to be derived from current and future benefits to be derived from current investment would lead to a marginal allocation of expenditures partly to consumption and partly to investment. But to the extent that private or public decision makers wish to use the additionally available external resources to increase private or public consumption, there will be a decline in intended domestic savings, for domestic income remains unchanged. Thus, a case in which foreign capital inflows had no impact on domestic saving behaviour would appear to be extreme rather than typical" (p.26).

Griffin (1970) on the other hand, says that there exist cases where capital imports have retarded development in the recipient countries instead of acting as its catalyst. It is for instance accepted that where foreign capital has been used mostly to supplement consumption, instead of financing investment, growth in that country will be retarded. Later on we shall present the evidence provided by both claims.

3.4 Theoretical Explanations of the Debate

3.4.1 The nature of saving in LDCs

To avoid making generalisations on the impact of foreign capital flows on the recipients savings it is important to understand first the nature of savings in these countries.[64]

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64 J.Mikesell and E. Zinser (1973).

In an attempt to explain why foreign assistance to LDCs can have either negative or positive effect on growth, development models that are based on the Keynesian theory begin with the assumption that saving is a function of income and income in turn, is a function of investment.[65] The neo-classical models, however, assume that saving is a function of investment. Capital oriented models have been used extensively in LDCs as a simple way of looking at the relationship between growth and capital requirements.

In the case of the two - gap model, where the assumption is that at any particular time LDCs are faced by either a saving or foreign exchange constraint, capital from abroad is seen as a method of helping LDCs to achieve higher growth rates.[66] However, let us begin the analysis of the relationship between capital flows and a country's saving rate with Haavelmo's (1963) hypothesis.[67] According to Haavelmo the relationship between foreign capital flows and a developing country's investment rate is shown by:

(7) $I(t) = aY(t) + H(t)$ where;

t = time

I = gross investment

Y = gross national product

H = foreign capital inflows

65 J.M. Keynes (1936).
66 E.Bacha (1990).
67 M.Rahman (1968).

a = coefficient on GNP

Since Haavelmo assumed that at national income level I(t) = S(t) where S(t) is gross savings, Haavelmo was able to argue that, it was possible that the recipient countries would lower their savings if foreign capital was made available. As he put it:

> "..that is to say that investment is a function of income including what they get from abroad .....I think we see the implications. It means for example that domestic savings could be negative if it (foreign capital) is very large" (p.1).

The core of Haavelmo's suggestion is that domestic savings is not a function of income alone but also related negatively with the inflow of foreign capital. Rahman (1968) slightly modified the Haavelmo equation (7) so that it reflected directly on the factors affecting the domestic saving of a recipient to:

(8) $S(t) = aY(t) + bH(t)$

where b is a coefficient on foreign capital flows.

Dividing equation (8) by Y(t) throughout, so as to express the saving equation as a ratio of income, we have:

(9) $S(t)/Y(t) = a + bH(t)/Y(t)$

where S(t)/Y(t)= average saving rate

and H(t)/Y(t) = proportion of capital flows to gross national product

From this formulation, Rahman could hypothesise that there existed a negative relationship between S(t)/Y(t) and H(t)/Y(t). When Rahman estimated this relationship with cross-country data for 31 LDCs he found that the foreign capital flows were indeed, as hypothesised by Haavelmo, inversely related to the LDCs saving rate.[68] Subsequent writers who have analysed this relationship have used the Keynesian saving function as a point of departure as;

(10) $S = a_0 + a_1 Y$

where S= gross domestic savings

Y= gross domestic product

and a_1 = marginal propensity to save out of income and, that $0 < a_1 < 1$.

Equation (10) states generally that, domestic savings of a country depends on the level of income. Several alternatives of this general saving equation have been used to get an idea of the movements of the saving effort of the recipient countries over time. Such alternatives include the semi-log saving function below:

(11) $S = b_0 + b_1 \ln Y$

where ln Y = logarithm of income

By hypothesis, the elasticity coefficient (b_1) is positive. If one assumes that the transition of a country from low income to middle income brings to its people an awareness of modern consumption

68 See for example M.Rahman (1968).

behaviour, then, such an awareness will force the country to lower its saving rate.

Gupta (1975) showed that, in addition to income, there were other factors like direct and indirect effects of dependence rates as well as foreign capital inflows which can better explain the saving rate of a recipient country. His analysis began by a specification of a saving function of the form:

(12) $S/Y = a_0 + b_0Y + c_0G + d_0Dr$

where; S/Y = saving rate

Y = per capita income

G = growth rate of income

Dr = dependence rate, defined as the percentage of population in the (0-14) and (65-and over) ranges.

Such an estimation, he argued, was capable of capturing only the direct effects of the dependence rates on the saving rate. In order to allow for total effects of these variables on saving rates, attention is paid to the incorporation of a linear and homogeneous production function of the form:

(13) $Y = f(K, L)$

where Y = total out put

L = total labour

K = total capital

The production function in equation (13) is further expressed in per capita terms as:

(14) $Y/N = f(K/N, L/N)$

where N = total population

L/N = total labour participating rate (TLPR)

Y/N = output per capita

K/N = capital per capita .

Equation (23) is further expressed as:

(15) $y = a_1 + b_1 k + c_1 TLPR$

where $y = Y/N$ and $k = K/N$ $TLPR = L/N = a_2 + b_2 Dr$

At this point, it is appropriate to consider also the net effect of foreign capital inflows on the saving rate of a recipient. The point of departure leading to the examination of this effect is equation (12). When foreign capital flows are entered into equation (12) the result is,

(16) $S/Y = a_0 + b_0 y + c_0 G + d_0 Dr + e_0 F/Y$

where F/Y = foreign capital flows as a proportion of GDP.

Following Griffin and Enos (1970), the impact of foreign capital flows in equation (16) is assumed to be negative. On the other hand, the impact of capital flows on the growth rate of the recipient is assumed to be positive. In particular, following Gupta (1975) the growth rate of income equation is specified as:

(17) $G = a_3 + b_3S/Y + c_3F/Y$ where $c_3 > 0$ according to the assumption put on the impact of the inflows on the growth rate of income stated above. When equation (17) is substituted back into equation (16) we have:

(18) $S/Y = a_0 + b_0y + c_0 (a_3+b_3S/Y+ c_3F/Y)+ d_0Dr + e_0F/Y$

$= a_0 + b_0y + c_0a_3 + c_0b_3S/Y + c_0c_3 F/Y + d_0Dr + e_0F/Y$

and;

(19) $S/Y - c_0b_3 S/Y = a_0 + b_0y + c_0a_3 + c_0c_3 F/Y+ d_0Dr +e_0F/Y$

$= a_0 + b_0y + c_0a_3 + (c_0c_3+ e_0) F/Y + d_0Dr$

and;

(20) $(1 - c_0b_3) S/Y = a_0 + b_0y + c_0a_3 + (c_0c_3 + e_0) F/Y +d_0DR$

finally:

(21) $S/Y = \frac{1}{1-c_0b_3} [a_0 + b_0y + c_0a_3 + (e_0 + c_0c_3)F/Y + d_0Dr].$

Equation (21) has been used by Gupta as an equation which is capable of showing the total effects of both dependent rates and foreign capital flows on the recipient's saving rate.[69]

3.4.2 The Psychological Hypothesis

Another hypothesis, seeking to explain the negative relationship between foreign capital and the recipient's domestic

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69 See K.L. Gupta (1975).

saving rate was suggested by Rahman (1968). He began by criticising the view that foreign assistance is expected to supplement domestic saving effort in LDCs by suggesting that there should be a psychological (behaviouristic) explanation to the connection between foreign assistance and domestic saving rates of recipients.

The logic that, an increase in foreign assistance causes a relaxation of the recipient government saving effort and thus, a reduction of the average saving rate by the government (S/Yg). To test this hypothesis, which is almost similar to Haavelmo's, Rahman chose a sample of 31 LDCs and regressed their average saving rates against the ratio of foreign assistance to GDP as in equation (22)

(22) $S/Yg = a_0 + a_1 (F/Y)$.

Indeed, the results showed that foreign assistance was negatively related to saving rates ($a_1 = - 0.23$) and the estimates were significant at the conventional 10 percent level of significance.[70]

Following Rahman's method, Gupta (1970) was dissatisfied with the inclusion of only 31 LDCs. Instead, he took a larger sample of 50 LDCs and repeated Rahman`s work. Gupta found that the coefficient on the foreign capital flows was positive ($a_1 = 0.03$) though the t - test showed the results to be insignificant ($t = 0.4$). From these results, Gupta noticed that by using equation (22) it would appear that the net effect of foreign capital inflows on recipient's saving rate was at best, inconclusive due to the fact that it produced changing results under similar conditions.

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70 M. Rahman (1968) op.cit.

Rahman(1968) has regressed gross domestic savings of some Latin American countries against their foreign capital inflows and GDP as follows :

(23) $S = b_0 + b_1Y + b_2F$

where F = net foreign capital flows and other variables are as defined earlier.

There were mixed results from the application of equation (23) to different Latin American countries. Rahman (1968) found that in 12 of the countries selected, foreign capital flows were negatively related to the recipient's savings. Even in the remaining 5 countries which showed a positive relationship between foreign capital flows and domestic savings, the coefficient was insignificant. Papanek (1972) later added the per capita income variable into the saving rate function and operated with a semi- log function as follows:

(24) $S/Yg = \log d_0 + d_1 \log (Y/Pop) + d_2 \log (F/Y)$

The results he obtained tended to support the psychological hypothesis that an increase in foreign assistance causes a reduction in the average saving rate of the recipient.

Papaneck(1972) explained the existence of this relationship in terms of the situation in most LDCs. A feature present in these countries is that they are subjected to foreign exchange constraints as one constraint to growth. An increase in foreign assistance directly or indirectly provides savings needed for investment. At the same time, it acts as a one-to-one substitute for domestic savings in financing investment.

3.4.3 Deterioration of Terms of Trade and Other External Factors

One exlanation to the negative relationship between foreign capital and domestic savings in LDCs, that focuses on deterioration of terms of trade has been suggested by Papanek (1972). This explanation is more relevant to recipients of foreign assistance who are dependent on export earnings from a few agricultural and mineral exports. In periods of export price crisis for these exports, these countries would normally seek foreign capital assistance, not for raising their domestic savings, but for consumption purposes.

Two other external factors have also been suggested by Papanek (1972) and Henley et al (1980) to help in the explanation of a negative relationship between foreign capital and domestic savings in LDCs. These are wars and long periods of famine. Increased foreign capital to countries with civil wars or to countries stricken by long periods of famine has been observed to increase consumption in these countries rather than increasing their ability to save and promote economic growth. So, when a regression is run between foreign capital flows and the domestic saving of countries affected by these external factors, a negative relationship is usually observed.[71]

Griffin and Enos (1970) have raised the issue of foreign assistance given in the form of repayable loans. They argue that such an arrangement might lead into a reverse foreign assistance; where

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71 G. Papanek (1972).

the net beneficiary of the assistance is, ironically, the donor. This phenomenon is also known as reverse foreign capital flows.

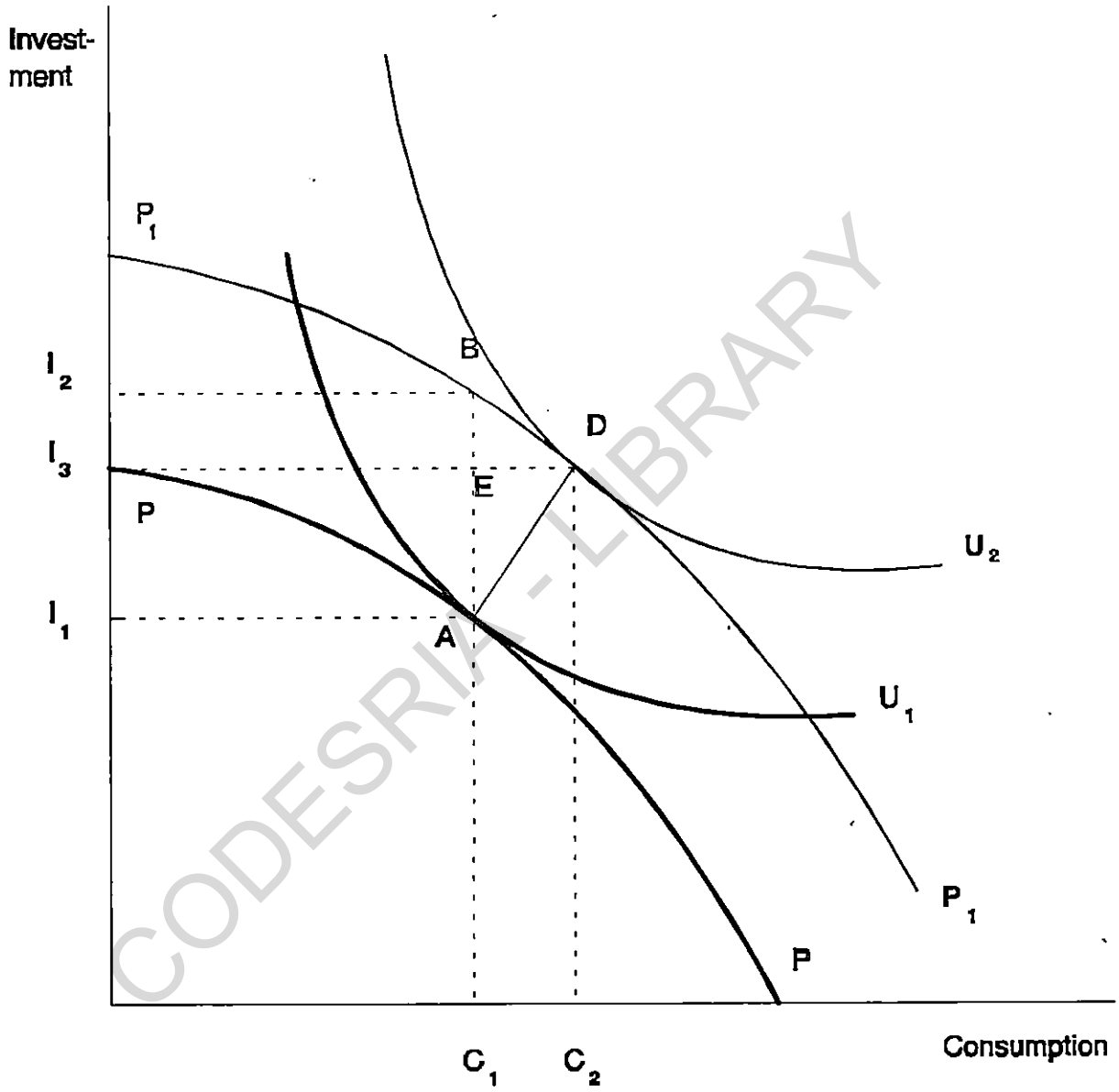
A study by Chenery and Bruno (1963) observed a dual role for the state of foreign exchange balance as it affects economic growth. They view foreign assistance as having the effect of supplementing domestic saving in recipient countries. However an important observation is made in this study that, during the early stages of a country's growth, it can not produce domestically some vital industrial goods which are necessary for further production. If donors act in time and provide assistance at this stage, that assistance will have a large (positive) impact on the growth rate of income of the recipient.

By relieving the foreign exchange and saving constraints foreign capital inflows make it possible for an LDC to properly utilise its domestic resources and hence accelerate growth. Thus, the impact of external resources on the growth of a recipient is judged by its contribution to the mobilisation and allocation of resources, i.e. skills and organisation, supply of domestic savings and supply of imported commodities. When external capital inflows are available there is need to examine other limitations on investment and growth. Indeed, most LDCs are limited by their inability to meet the changing patterns of internal and external demand.

3.5 The Diagrammatic Approach to the Debate

As a contribution to the debate on the impact of foreign capital on saving and income growth of recipients Gillis et (1987) showed diagrammatically how capital inflows influence the growth of income of a recipient.

Figure 1: Impact of foreign capital inflow on investment and consumption in recipient countries



Source: Adopted from Gillis et al (1987)

Figure 1 desribes a recipient LDC that, before the incoming of capital was producing both investment and consumption goods along the production possibility frontier marked PP. The country's community tastes are as defined by an indifference curve marked U_1. Without the capital flows the country's welfare is maximised (subject to the PP curve) if it produces and consumes at point A, where indifference curve U_1 is tangent to the production possibility frontier PP. Notably, at that point, the country's consumption point is point C_1 while its investment level is at point I_1.

The next assumption made is that the country in question gets (through donor assistance) an amount equal to AB (in the diagram). It is assumed that the purpose of this assistance is to help solely in the investment process of the recipient country. This transfer has the effect of raising investment possibilities in that country to I_2. In addition, the capital flows, since they are resources not produced within the recipient, pushes the country's production possibility frontier outwards from the original PP frontier to the new P_1P_1 frontier as shown in the diagram.

With the added foreign resources, the recipient maximises her welfare by producing at point D, the tangent point between the new production possibility frontier P_1P_1 and the indifference curve U_2. Following the "more is preferred to less" axiom in utility analysis, the additional resources from abroad transform the community indifference curves to a higher utility curve U_2.

However, for some reasons (for example the recipient's desire to have more consumption goods than investment goods), the recipient has considerable freedom to convert the capital flows to either

consumption goods or to investment goods. At point D, the country consumes C_3 amount of consumption goods while its investment level is at point I_3. With reference to Figure 1, out of the AB amount of foreign capital extended to the recipient, only a part of it (AE) has actually been invested. A portion of the foreign capital (BE) has been converted into consumption.

The point made by Gillis et al (1987) is that the effectiveness of capital inflows in raising the recipients growth depends on the amount of capital extended, the recipients production possibilities and the country's indifference curves. If for instance the country's tastes favoured consumption over investment, its equilibrium point after receiving capital flows would be along the P_1P_1 curve to the south east of point D, and would even convert more of its capital inflows into consumption. Some form of assistance (e.g. program aid) is designed to provide finance for general purposes and thus deliberately give the recipient the kind of choices shown in Figure 1.

Food aid on the other hand, is intended to increase consumption rather than investment. Even if all assistance were dispensed as project aid (targeted to specific projects), substitution would still be possible. Project aid might be used for investments that the government would have undertaken even without foreign assistance. In that case, when capital from abroad is made available, resources are freed up for other purposes including consumption. When substitutions of this kind are possible, foreign assistance is said to be "fungible", and if capital from abroad has this fungibility characteristic, there is the possibility that it will lower the growth rate of income of the recipient.

The observation made by Griffin (1970) was that if aid caused domestic savings to fall, there was the chance that a proportion of the aid (b) that would be used for consumption rather than for investment, and that the incremental capital output ratio (icor) would rise given the observed donors bias towards large (prestigious) capital investment projects which are not necessarily the most productive from the recipient point of view. If capital from abroad leads to a rise in icor and a proportion of the capital flows is used for consumption purposes, then from the original income growth model we observed earlier: $g = s/k$, other factors observed above are incorporated into the growth rate of income and this equation becomes: $g^* = s'+(1-b)a/k'$ where $g^* < g$, $s' < s$ and $k' > k$ and (1-b) is the proportion of aid that is consumed.

Following the discussion above it is apparent that two issues related to capital flows seem to have been resolved. First, if capital flows were available enough to "drown" needy countries, it would be possible for them to increase their income growth rates. Thus even the group of economists which is pessimistic that the inflows do not help recipients to grow, agree that the amount of capital made available by donors has a considerable influence on the recipient saving and investment rates and income growth.

Another aspect of capital flows which seems to have been resolved is the possibility of recipients to use the inflows for consumption purposes. Food aid is particularly cited as a form of assistance which does not help directly to raise domestic savings. The following section reviews some of the empirical evidence obtained

by various researchers who have concerned themselves with the impact of capital flows on LDCs growth.

3.6 Some Existing Evidence

As mentioned above, the empirical evidence available tends to support both hypotheses. That is, there is evidence to support the claim that foreign capital flows help to increase both savings and investment rates and directly or indirectly help a recipient to reach targeted growth rates. On the other hand, there is evidence to support the alternative hypothesis that the availability of foreign capital flows may serve as a one-to-one substitute for the available domestic savings and investment resources. Indeed, when the inflows are used for consumption purposes they may cause income growth to fall.

Chenery and Bruno (1963) Chenery and Adelman (1966), Cassen et al (1986) among others have regressed domestic savings against the capital inflows of a number of LDCs including among others countries such as Peru, Uruguay, Israel, Taiwan, Pakistan, Brazil and Argentina. In Greece, Israel, Taiwan and Philippines in particular they observed that in these countries;

> "a substantial increase in investment financed largely by foreign loans and grants has led to rapid growth of GNP followed by a steady decline in the dependence on external financing. Not only was growth accelerated by foreign assistance but the ability of the economy to sustain further development was substantially increased" (Chenery and Strout, 1966 p 679).

Griffin (1970) tested his proposition that foreign aid inflows reduce the domestic saving rate. He used cross - sectional data for a number of LDCs and regressed foreign capital flows on domestic savings of these countries and his results were:[72]

(25) $S/Y = 11.2 - 0.73\ A/Y \qquad R^2 = 0.54$

where S/Y = domestic saving as a proportion of GNP

A/Y = aid as a proportion of GNP.

This, Griffin argued, provided the empirical support for the theoretical argument that aid inflows caused domestic savings rates to fall.[73]

Rahman's psychological hypothesis explained above that an increase in foreign capital causes a relaxation of the recipient government saving effort and thus a reduction of the average national saving rate yielded inconclusive results when Gupta (1970) repeated the Rahman (1968) test.

Gupta (1970) went further on to classify his sample countries into income per capita groups (Y/pop) and repeated the procedure followed by Rahman. His results were as tabulated below.

72 See for example K. Griffin (1970).
73 K.Griffin (1970) op.cit.

Table 7: Relationship Between Per capita Saving and Foreign Capital Flows

Equation: $S/Y = a_0 + a_1 (F/Y)$

Income Group	Coefficient (a_1)	T-Statistic (t_1)	R^2
$0- 124	0.33	1.1	.35
$125-249	-0.02	-0.3	.08
$250-675	0.42	1.3	.38

Source R.F. Mikesell and J.E. Zinser (1973) p.13

It was in the middle income levels that the negative relationship between capital flows and saving rates was observed. In other income levels (that is the low and high) the relationship was positive but insignificant.

An additional test of the psychological hypothesis was done by Rahman (1968) who suggested that a relaxation of the saving effort manifests itself in the decrease in taxation. Alternatively, there can be a relative increase in government spending (suggesting an increase in government consumption or a decrease in government investment). To test this, Rahman (1968) regressed the average tax rate per capita national product and the ratio of foreign capital flows to gross national product. He noted that although the evidence was not impressive it would seem that more governments react to a receipt of foreign capital by increasing their investment outlays than their consumption expenditure. It was only in Costa Rica that the regression coefficient was significantly negative. The rest of his results are shown as Table 8.

Table 8: Capital Inflows and Domestic Saving in Latin America.

Equation: $S = b_0 + b_1Y + b_2F$.

Country	**Coefficient** (b_2)	**T-ratio** (t_2)
Argentina	-.34	-1.7
Bolivia	-.82	4.9
Brazil	.17	1.0
Chile	-.75	-3.0
Columbia	-.78	-3.6
Costa Rica	-.63	-9.0
Dominica	-.56	-3.2
Equador	-.45	-3.2
El Salvador	-.60	-5.5
Guatemala	-.51	-3.2
Honduras	-.49	-2.5
Mexico	-.64	-2.3
Nicaragua	-.56	-4.3
Panama	-.93	-3.9
Peru	.15	5.0
Uruguay	-.53	-4.2
Venezuela	-.20	-1.3

Source : R. Mikesell, and Zinser, J. (1973) p.13.

Chenery and Eckstein (1970) took the same sample of countries as Rahman, but included the export ratio (X/Y) of these countries as a variable in the saving equation:

(26) $S = c_0 + c_1Y + c_2(X/Y) + c_3F$

The rationale of including the export ratio (X/Y) was that an increase in export earnings in Latin American countries was accompanied by an increase in the saving ratio as it permitted a larger volume of investment to take place.

According to Chenery and Eckstein, an inflow of capital also provide the foreign exchange for additional investment but, at the same time, serves as a substitute for domestic saving in financing investment. While both increased exports and capital inflows provide the foreign exchange needed to support a higher level of investment, the increase in capital imports also increases the current account deficit. Hence, gross domestic savings does not rise even though gross domestic investment may have increased by the same amount of capital inflow.

Gupta (1975) had realised that researchers using a single equation estimation might have contributed in the prolonging of the debate of the impact of capital flows on the recipient's development due to the fact that single equations capture only partial effects. Total effects are captured by simultaneous equation models. When he applied the said model to recipients like India, Pakistan and Brazil the results were:[74]

74 See K.L.Gupta (1975).

(27a) S/Y = 18.2 + 0.01Y + 1.5G - 1.1F - 0.3 Dr
(3.4) (1.6) (5.2) (-1.3) (-1.2)

(27b) S/Y = 9.9 + 0.01Y + 2.5G -0.2 Dr - 0.78 Aid
(1.2) (2.4) (1.4) (-0.7) (-2.9)

(27c) G = 3.1 + 0.095 S/Y + 0.26 F
(1.3) (1.6) (3.7)

where Y = real per capita income
G = growth rate of income
Dr = dependence rate
Aid = grants
F = other foreign capital flows
figures in brackets below each estimate are t-ratios

Gupta's results showed that both aid and other forms of foreign capital flows were negatively related to the saving rate but positively related to the growth rate of income (G). Hyuha (1984) did a simultaneous equation model for Uganda in the 1950-1973 period and obtained the following results:

(28a) S/Y = -6.5 + 0.2 DY/Y + 0.01 Y/N + 0.66 FI -0.09 CI + 0.6 b
(-0.4) (1.3) (0.7) (1.4) (1.2) (1.5)

$R^2 = 0.85$

(28b) DY/Y = - 14.9 + 0.76 S/Y + 0.3 FI + 0.009 CI
(-2.8) (4.6) (1.5) (1.5)

$R^2 = 0.68$

(28c)I/Y = 10.3 + 0.4 FI + 0.02 (DY/Y)-1 + 0.006 CI + 0.046b
(3.1) (4.2) (0.6) (2.33) 0.4)

- 0.75r
(-4.2)

$R^2 = .88$

where: S/Y = the average saving rate
DY/Y = the growth rate of income
I/Y = the investment rate
Y/N = per capital income
FI = financial inter mediation
CI = foreign capital inflows
b, r = lending and borrowing interest rates respectively

Note: figures in brackets are t- ratios

The main policy implication regarding the impact of foreign capital flows in the Ugandan case was that the net effect of foreign capital flows on the development process needed further investigation and analysis. As the Uganda case reveals, the inflows tend to have a negative impact on domestic savings but a positive impact on investment and growth rate of income.

3.7 Some Empirical Evidence on Tanzania

Issues related to the impact of foreign aid to Tanzania date back to the late 1960s. The main concern of policy makers then was to avoid allocating foreign capital a primary role in Tanzania's development, for, as we have shown in Chapters I and II there were indications that, even if foreign capital would be forthcoming, it would not be enough for the vast development needs of the

country.[75] Instead, the basis for Tanzania's development was to be self - reliance.

Financial and other capital resources from abroad were to be only augmentary and were accepted as long as they helped to advance the development aspirations of the country.[76] The increased assistance to Tanzania especially during the 1970s, a period which has been referred to in literature as the period of "aid boom"[77] was in the words of the then Planning Minister, a reflection of the development needs, requiring investment in large scale projects and demanding large amounts of domestic as well as foreign resources.[78]

It was in the early 1980s that Kjekshus and Mushi (1982) attempted to measure the volume of assistance to Tanzania in relationship to other recipients and found that it was received under favourable conditions. Skarstein and Wangwe (1986) and Collier (1987) have also related the assistance to Tanzania to a number of indicators like import surplus, exports and gross fixed capital formation and found it to be not insignificant.

In relationship to the on - going debate about the impact of foreign capital flows on recipient's domestic savings, investment and growth, Mjema (1985), used a narrow definition of capital flow (grants and soft loans) to examine its impact on the saving-investment process in Tanzania for the 1966-1982 period and got he following results:

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75 See among others J. Nyerere (1968).
76 C.Msuya (1977).
77 See P.Collier (1987).
78 See K. Malima (1978).

(29a) S/Y = 0.1 - 0.01 Y/N -0.7 F/Y + 0.4 DY/Y -0.2r
(28.3) (-.4) (-19.6) (20.5) (12.1)

(29b) DY/Y = - 0.2 + 2.05 S/Y + 1.67 F/Y
(-17.3) (26.4) (24.1)

(29c) I/Y = 0.3 + 0.4 DY/Y + 1.4 F/Y - 0.03 b
(0.2) (0.2) (0.2) (-0.1)

where S/Y = saving rate
Y/N = per capita income
F/Y = foreign capita flows as a ratio of GDP
DY/Y = growth rate of income
r = saving interest rate
b = lending interest rate
I/Y = Investment rate

Note: figures in brackets are t-ratios.

Like in the case of Uganda, the verdict from the above results for Tanzania suggested a need for further and careful research with regard to the impact of foreign capital resources.

3.8 Summary

It has been observed herein that there exists no universal definition for capital flows and it is up to the researchers to choose the kind of definition that best suits their purposes. For the purposes of this study, the term foreign capital flows has been defined in relation to loans and grants which the country received from 1961 to 1985.

Concerning the debate on the effect of capital flows on recipients growth, it is apparent that the impact of foreign capital flows on the economic development of LDCs has largely been examined in terms of the Harrod - Domar growth model which was fashionable in the 1950s to the 1960s. Two opposing views with respect to the impact of capital flows on the recipients growth have been advanced. The first claim, presented by Chenery and Strout (1966), maintains that foreign capital flows act as a supplement to domestic savings and hence raise the growth rate.

The opposing view expressing scepticism about the role of foreign capital in promoting economic development in LDCs is that flows of foreign capital, instead of accelerating economic development have sometimes retarded it. It is claimed by this view that capital inflows reduce the domestic saving rate. Rather than being a supplement to domestic resources, foreign capital often acts as a substitute for them, and that this mechanism operates both in the private as well as in the public sector. It is further claimed in this alternative view that, faced with inflows of foreign capital, most LDCs governments may reduce their tax effort and change the composition of their expenditure towards more consumption.

In the following chapter an examination of the saving, investment and income growth theories are examined in relationship to the situation in Tanzania for the 1961 -1985 period.

CHAPTER IV

QUALITATIVE ANALYSIS AND MODELLING OF THE IMPACT OF FOREIGN CAPITAL FLOWS TO TANZANIA

4.1 Introduction

The objective of this chapter is to analyse the extent to which domestic saving in Tanzania was affected by inflows of foreign capital during the 1961-1985 period. The impact of foreign capital flows on Tanzania's income and investment growth will be analysed herein in so far as it is linked to the country's saving efforts. As a considerable amount of investment was financed by the use of foreign capital, it is useful to analyse also the way foreign capital was actually allocated within different sectors of the economy.

The chapter is organised as follows: First, the theoretical relationship assumed to exist between foreign capital inflows and domestic savings in recipient countries is analysed with the aim of showing the role of capital inflows in the domestic savings of recipient countries. Second, the chapter focuses on the applicability of the said relationship to the specific case of Tanzania. Third, an analysis of the impact of the inflows on saving effort will, in turn, entail an examination of how foreign capital flows were allocated within different sectors of the Tanzanian economy. In the last section, a simple model, linking together various ways that foreign capital was related to domestic savings in Tanzania is developed.

4.2 Foreign Capital Inflows and Saving Behaviour in LDCs

Foreign capital from one country (rich) to another (poor) is assumed to help the recipient to ease either savings or foreign exchange constraints said to exist in recipient countries.[79] As may be recollected from the literature review chapter, this was among the principal reasons for capital to be disbursed from donor nations to recipient countries.

The presence of the above mentioned constraints prevents domestic saving resources in many LDCs from being converted into productive investment. Thus, it was maintained that the availability of foreign capital supplements and often catalyses the existing savings and investment resources and allow a recipient to achieve higher economic growth rates.

In developed countries, the saving behaviour has been analysed by using either the Keynesian saving - income relationship, the Life Cycle Hypothesis (LCH),[80] the Permanent Income Hypothesis (PIH)[81] or the Relative Income Hypothesis (RIH).[82] These hypotheses tend to emphasise that for developed societies, the size of people's income is significant in explaining the amount of individual savings.

While it is also true that even in LDCs people's income affects the level of savings, other variables like financial inter mediation, wealth, foreign capital flows, demographic factors such as the size of family and dependence ratios affect individual saving behaviour.

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79 This view is also expressed in D. Snyder (1990).
80 See also F.Modiglian et al (1963).
81 See R. Brumberg and F. Modiglian (1954).
82 M. Freedman (1973).

However, contrary to the expectation of most writers, that foreign capital flows would supplement the recipient's domestic savings, evidence shown in the previous chapter has also uncovered that, in practice, foreign capital could, given certain circumstances, substitute for, instead of supplementing the available domestic saving resources.

Following the analytical works by Griffin and Enos (1970), Papanek (1972), Hazari (1975) and Snyder (1990), it was observed that this substitution may result either because, (a) the availability of foreign capital induces a consumption pattern known in literature as "aid switching" behaviour whereby the recipient country increases its consumption level or (b) the recipient government lowers its taxation efforts in the wake of foreign capital receipts or (c) the private sector's incentive to save is reduced due to the availability of low interest loans. The net outcome being that aggregate savings in the recipient countries are reduced when foreign capital is made available.

Papanek (1972) did also identify additional factors which may lead to foreign capital substituting for domestic savings. One such factor is where foreign capital extended is actually meant for consumption. Food aid is cited to fall under this category.

The same applies to foreign capital given to countries affected by natural hazards like floods, drought, earthquakes etc. Another factor relates to a situation where foreign capital is given to a country involved in civil wars and other sorts of domestic unrest. Instead of being used for raising domestic saving rates, flows given under these conditions may be used for consumption purposes.

As cited in the preceding chapter, there still remains some controversies surrounding the determination of precedence between foreign capital flows and domestic savings of recipient countries, an aspect which is followed up by this study in the following chapter.

While in theory foreign capital flows are assumed to help a recipient to overcome foreign exchange and saving constraints, experience has shown that under the above circumstances, inflows of capital to recipients can have the undesirable effects of substituting for, instead of supplementing the domestic savings.

An examination of whether or not the above explained theoretical expectation about foreign capital flows on savings was realised in the case of Tanzania during the 1961-1985 period is the pre-occupation of the following section.

4.3 Application of the Saving Theories to the Tanzanian Context

In connection to what was discussed in the preceding section it should be stated from the outset that, conditions like famine brought about by long periods of drought, war, availability of low interest loans and balance of payment problems which have been identified in literature as causing a negative relationship between foreign capital and a recipient's domestic saving seem to have affected Tanzania at one time or another during the period under investigation. Thus, a brief examination of the way the said factors affected the country's domestic savings becomes essential.

Tanzania was affected by severe drought conditions in 1973 and 1974 which in turn negatively affected the production of both food and cash crops. During those years as is also true of the early 1980s, the country began to experience food shortages. To avert what would have otherwise been a famine catastrophe, the country had to run down its foreign reserves and utilise them mainly for importation of food grains. It is true that a number of international donors played an important role in making food grains available to Tanzania.

It is thus plausible to assume that part of foreign capital flows provided to Tanzania during the time the country was experiencing food shortages was used for consumption and not for saving purposes because they were meant for that purpose.

Tanzania was, during 1978 and up to 1979 at war with neighbouring Uganda after the latter had occupied part of northern Tanzania. Although the war lasted for less than two years, it heavily drained the country's resources (foreign as well as domestic) and was later to become one of the contributing factors to Tanzania's unprecedented economic crisis that was to unfold in the 1980s.[83] Thus, it is also plausible to suggest that aid received during this period could not have been expected to encourage domestic savings in Tanzania.

Where taxation is concerned, there is no evidence to indicate that Tanzanian government did relax its taxation efforts as a result of increased foreign capital flows. Other researchers have claimed that it

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83 See N. Lipumba et al (1984).

is because the tax rates in Tanzania are so high that there is less tax payer compliance.[84] The slow growth rate in tax revenues was a result, not of increased foreign capital flows but caused by a narrow tax base and an inefficient tax administration.

It should also be pointed out that due to the dominant role of the public over the private sector in Tanzania during the period under consideration, capital flows tended to have a positive impact on government savings because most of it was channelled towards that sector.

A study by Rutayisire (1980) which included expected external finance, gross domestic product, tax revenues and the rate of inflation as possible factors influencing domestic savings in Tanzania found a negative relationship between aggregate domestic savings and expected foreign capital inflows. In agreement with the argument that foreign capital tend to have a positive impact on government savings, the negative sign was reversed when only government savings were regressed against foreign capital inflows.[85]

Where inflation is concerned, Lipumba et al (1990) have shown that in Tanzania, one can isolate periods of high inflation as corresponding to periods of low saving.[86] Also, egalitarian income distribution policies (for example progressive taxation) contained in the Arusha Declaration in 1967 minimised considerably the possibility of increasing household savings through wealth accumulation by individuals. Where the size of the family is

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84 For a clearer treatment of this view see N. Lipumba and N. Osoro (1990).
85 L. Rutayisire (1980).
86 L.Rutayisire op.cit.

concerned, studies have shown that it has a negative influence on savings by households.[87]

Since the early 1970s, a considerable number of households in Tanzania was experiencing a significant reduction in the burden of dependants due to health and education facilities being considerably subsidised by the government. One would therefore expect that household savings would be significant during the 1970s and less significant during the late 1980s since such subsidies have been gradually removed following the 1986/87 budget squeeze.[88] In Section 4.4 a review of development policy undertaken in Tanzania since independence is made in relationship to domestic saving effort.

4.4 Development Policy and Domestic Savings in Tanzania

At the time of independence in 1961, economic policies in Tanzania were aimed at achieving higher per capita incomes and self-sufficiency in middle and high level manpower needs.[89] These goals were dictated by the need to change the low standard of living levels inherited from the colonial period. The Arusha Declaration of 1967 represents a significant turning point in the evolution of development policies where mobilisation of domestic savings is concerned. After adopting the Arusha Declaration in that year, the government nationalised almost all the major means of production, distribution and exchange owned by foreigners. Following this move, institutions

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87 L. Rutayisire op. cit.
88 See Budget Speech Minister for Finance 1985/86.
89 J. K. Nyerere (1968).

such as banking, insurance, import and export trade, major agricultural estates and large manufacturing concerns were all nationalised and were placed under what the Tanzanian government called "the commanding heights of the economy".

The development motto used to mobilise the people's efforts including the need to increase domestic savings was that the basis of the country's economic development was to be "self-reliance" whose central theme was that the people's own efforts were vital for Tanzania's development partly as a response to the uncertainties surrounding foreign capital flows which were cited in Chapter II. It was unreliable, following the cited experiences of the 1960s with foreign capital, to continue to formulate subsequent Tanzanian development plans with anticipation of foreign capital. Nyerere (1968) in particular emphasised the importance of mobilising domestic savings by stating that:

> "independence means self reliance. Independence can not be real if a nation depends upon gifts and loans from another for its development".[90]

Despite the adaptation of a policy aimed at attaining self sufficiency in savings, Tanzania's ability to raise substantial domestic savings has been limited compared to her development aspirations. This rather poor performance of the efforts to mobilise domestic savings in Tanzania is partially accounted for by the fact that essentially the majority of the people from whom savings were to be extracted are poor.

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90 See J.K. Nyerere (1968).

Worse still, even those parastatals that were deliberately created during the Arusha Declaration period and charged with the responsibility to mobilise savings have turned out to be inefficient and loss making. The failure by the parastatals to mobilise domestic savings has in turn meant that foreign capital has played a significant role in providing the government the foreign savings necessary for investment. Accordingly, in appreciating the positive contribution made by foreign capital flows to government savings, the (then) Tanzanian Finance Minister put it this way;

> ....."in order to make the best possible use of this significant support we are receiving from outside, we have to match it with our own internal resources in addition to what we must spend on government annual needs. If we want to take our development aspirations seriously, we have no choice but to find these savings. The savings from internal sources have two components. One is the surplus of government revenue over recurrent expenditure. The second is savings of the people and institutions" (p.11).

The performance of the efforts to mobilise domestic savings in Tanzania during the period under investigation is shown in Table 9.

Table 9: Domestic Saving Effort in Tanzania 1966- 1985

Year	Sog/Y	Sf/Y	Sfin/Y	Shpub	Shpriv
1966	17.3	n.a	n.a	19.8	80.2
1967	19.0	0.5	-1.5	18.5	81.5
1968	18.1	1.3	6.1	33.5	66.6
1969	19.2	-1.9	4.7	31.5	68.4
1970	22.8	2.4	4.8	17.5	82.5
1971	23.3	6.0	6.0	18.3	81.7
1972	21.5	2.8	3.0	24.8	75.2
1973	18.1	5.9	2.1	42.5	57.5
1974	9.0	16.1	-0.2	24.1	75.9
1975	9.6	14.0	-0.3	-14.4	114.4
1976	21.2	4.6	5.7	25.8	74.2
1977	23.6	5.7	2.2	22.8	77.2
1978	11.1	17.2	2.3	29.4	70.6
1979	15.9	13.4	10.9	-15.8	115.8
1980	11.6	14.2	-8.2	-2.6	102.6
1981	13.0	10.1	-4.6	-22.5	122.5
1982	11.5	11.8	-0.5	-30.8	130.8
1983	8.7	7.3	-5.5	19.8	80.2
1984	7.4	10.0	-4.9	12.6	87.4
1985	5.7	11.8	-0.5	n.a	n.a

Source: Lipumba, N. and Osoro, N. (1990) p.7.

Notes: sog/y = aggregate domestic savings rates
sf/y = foreign savings rate
sfin/y = aggregate financial savings
shpub = share of public savings
shpriv = share of private savings
n.a. = not available

The most widely used approach for computing aggregates domestic savings which is also used in this study is to subtract foreign savings (sf) from Gross Fixed Capital Formation but less unrequited transfers. Table 9 (row 1) shows the resulting aggregate domestic savings expressed as a ratio of gross domestic product (i.e. Sog/Y) in Tanzania during the 1966-1985 period.

The aggregate domestic savings ratio in Tanzania in 1966 was 17.3 per cent and continued to increase to 23.3 per cent in 1971. However, by 1985, the aggregate domestic savings ratio had declined to 5.7 per cent. Signs of decline in this ratio first appeared in 1973 when Tanzania's aggregate savings rate was 18.1 per cent, down from the 21.5 per cent level it was in 1972. In 1977 the aggregate domestic savings rate rose to 23.6 per cent again, but thereafter, there was a consistent decline in this ratio.

Despite the saving mobilisation efforts undertaken in Tanzania during the Arusha Declaration in 1967, the share of public savings, compared to that of private savings had, for the entire period under consideration remained low (see Table 9). In 1966 for example, the share of public savings to total savings was 19.8 per cent. In contrast, the share of private savings in total domestic savings was

80.2 per cent. In 1968 and 1969 the share of private sector savings was rising, while that for the public sector was falling.

By 1973 the share of public sector savings was as high as 42.5 per cent compared to 57.5 per cent for the private sector. For a period from 1979 to 1982 the public sector had negative savings rates partly due to the losses made by same parastatal and partly due to large government budget deficits.

4.5 Capital Formation and Foreign Capital Flows to Tanzania: 1961-1985

In this section, and in the following model, Gross Fixed Capital formation (GFCF) is used despite its known weaknesses, and due to lack of a better estimate, as a proxy for investment. In literature (Cf. Griffin 1970, Griffin and Enos, 1970, Snyder 1990) one often encounters a claim that the effectiveness of foreign capital flows to raise the recipients' savings is reduced when the inflows are used to finance marginal investments.

In the case of Tanzania, however, this does not seem to be the case. The decision by the Tanzanian government to direct the incoming foreign capital flows for infrastructural development (e.g. roads, railways, health, education etc.) and for the financing of manufacturing sector was, as claimed by Skarstein et al (1988) essentially sound and in line with Tanzania's development aspirations of the time.

Tanzania managed (with the assistance of foreign capital flows especially in the 1970s) to achieve high levels of capital formation. In

average terms, during the 1960s foreign capital accounted for nearly one tenth of Tanzania's gross investment. By the late 1970s, foreign capital was responsible for more than two thirds of the country's gross investment.[91] Table 10 shows trends in gross fixed capital formation in Tanzania for the 1961-1991 period.

91 See Tanzania Economic Trends (TET) Vol. 1,(1988).

Table 10: GDP and GFCF Trends in Tanzania: 1961-1991

Year	GDP* (Tsh m)	GFCF* (Tsh m)	GFCF/GDP %
1961	4102	534	13.1
1962	4454	488	10.9
1963	4932	482	11.8
1964	6030	674	11.1
1965	6140	789	12.8
1966	7042	982	13.9
1967	7343	1232	16.7
1968	7874	1302	16.5
1969	8271	1213	14.6
1970	9173	1878	20.4
1971	9814	2372	24.1
1972	11172	2364	21.6
1973	13103	2600	19.8
1974	15994	3032	18.9
1975	19011	3540	18.6
1976	24419	5159	21.1
1977	28868	6663	23.0
1978	32167	7330	22.7
1979	36283	8592	23.6
1980	42118	8630	20.4
1981	49102	8632	17.5
1982	58226	10825	18.5
1983	70509	7752	10.9
1984	88092	11973	13.4
1985	120621	16872	13.9
1986	159648	28679	17.9
1987	226950	65175	28.6
1988	331217	97301	29.3
1989	406542	129022	31.7
1990	499999	218404	44.1
1991	690421	262378	38.0

Sources: IFS International Financial Statistics Year Book, 1992
BOS National Accounts of Tanzania 1976-1991, Dar es Salaam

Note: * Indicates market prices

At the time of Tanzania's independence in 1961, the ratio of gross investment to GDP was 13.1 per cent and by 1962 this ratio had declined to 10.9 per cent. An upswing in this ratio was recorded in 1966 where it reached 13.9 per cent. By 1971, the GFCF/GDP ratio had reached historical levels of nearly 24.1 per cent, thereafter it steadily decline to 18.6 per cent in 1975.

From 1975 to 1980, Tanzania was able to maintain this ratio at over 20 per cent level before falling again to 13.9 level in 1985. In the following section, the trends in capital formation in Tanzania are analysed in relation to the sources of investment finance during the period under consideration.

4.5.1 The TAZARA Effect in Capital Formation

The build-up in investment observed in Table 10, was slow especially for the period that followed immediately after independence. This is not surprising given the country's low domestic savings analysed in the preceding section. The objectives of the Tanzanian government, as stated in various development plans were aimed at accelerating the rate of capital formation and hence accelerate Tanzania's economic growth.

This explains the observed increase (in Table 10) in the GFCF/GDP ratio from nearly 13 per cent in 1961 to nearly 20 per cent in 1970. During this period under consideration, an all time peak of the government's investment effort was reached in 1971 when with the help of the Chinese assistance in the construction of

TAZARA the ratio of gross domestic investment to GDP was elevated to 24 per cent. Other estimates put it at 27 per cent.[92]

The heavy investment in the development of transport infrastructure, particularly TAZARA in the early 1970s was responsible for the high investment ratio observed during this time. The high investment ratio observed during the early 1970s was largely due to the importation from China, of construction equipment for the TAZARA project. In retrospect, it is doubtful whether, without the Chinese assistance and other alternative foreign capital sources, Tanzania could have been able to undertake investment expansion of this magnitude.

While it is irrefutable that most of the investment drive mentioned above was supported to a great deal by an inflow of foreign assistance, it is true also that the government was able to sustain gross national savings at an average level of about 18 per cent during the 1970s-1979 period. For the rest of the 1970s, though the investment ratio fell from the peak level reached in 1971, in most of the years between 1973 and 1980 the investment ratio was maintained at over 20 per cent level due to increased foreign assistance.

However, the government could no longer sustain this high ratio of investment largely because, as we showed earlier, during the early 1970s the country was struck by a succession of bad weather effects which affected the production of agricultural (food and export) crops. Furthermore, Tanzania was affected by the 1973 world-wide

92 TET (1988) op.cit.

increase in petroleum oil prices. As a result of bad weather effects and the cited oil prices rises, the country was not only forced to import food, but even her foreign exchange reserves were depleted.[93]

In retrospect, it was both wise and inevitable to slow the pace of investment in Tanzania. In terms of Table 10, this reduction in investment is portrayed as a drop in the investment ratio from 21.6 per cent in 1972 to 18.6 per cent in 1975. As the following section reveals, a different set of factors underpinned the investment expansion observed during the 1976-1979 period.

4.5.2 The Coffee and Foreign Aid Boom Effects

The recovery in the build-up in the investment observed in Table 10 from 1976 up to 1979 was due to two exogenous factors. The first was the increase, in international markets, of coffee prices following a frost in the world leading coffee producer, Brazil. The increase in coffee prices was responsible to a large extent for the modest built-up in Tanzania's foreign exchange reserves. The other factor was that, it was around this time that most aid donors to Tanzania were extending their assistance largely in grants form (see for example, Chapter II).

A study by the World Bank reveals that between 1977 and 1981 there was an increase in foreign assistance to Tanzania from US$ 421.1m to US $ 701.8m and that most of these funds were used

93 See N. Lipumba et al (1984).

for capacity expansion particularly in the manufacturing sector.[94] In terms of Table 10, following the coffee and foreign assistance boom, the investment ratio was revived to almost its 1971 (24 per cent) level. However, between 1978 and 1979, the country was at war with Uganda.

The war costs turned out to be very high. Conservative estimates put the total direct war costs at around US $ 400m. Other estimates have even higher figures because they include indirect war costs like of loss of production the country suffered because of its pre-occupation with the war. There is no doubt that the war aggravated even further the country's foreign exchange position which was already precarious following import liberalisation policies that were advised by the World Bank and consequently adopted after the 1977 coffee boom. Some studies (cf Skarstein et al, 1988) maintain that "it was quite unfortunate that this advice was followed" (p.86) since it resulted in increased imports and hence "an unprecedented deficit of US $ 675m or 58 per cent of imports" (p. 87). It was inevitable, following these events that the investment expansion in the country had once again to be slowed down.

Furthermore, the war was followed, in 1980, by a further increase in prices of oil and the prices of other imported inputs, the combination of which as we have shown in Chapters I and II, have almost thrown the country into an economic crisis. The drop in the investment ratio observed in Table 10 starting with 1981 and

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94 See R. Skarstein and S. Wangwe (1986) and also World Bank Country Report on Tanzania (1986).

extending to cover the rest of the period up to 1985, was in response to this crisis.

In summarising this section, it has been noted that the expansion of investment in Tanzania was undertaken in order to cope up with the country's development aspirations. Almost throughout the 1970s, the country, partly with the help of foreign capital flows, was able to attain high investment ratios reaching up to 20 per cent. However, this expansion in investment did not lead the country to achieve the desired high economic growth levels. This was because, when in the late 1970s and early 1980s the country experienced economic problems, the investment too, fell a victim of those economic traumas. What is stressed here is that the idea to utilise the foreign capital for investment expansion and for infrastractural development was rational and in line with the development objectives of Tanzania during that period.

At this juncture, this study turns to the presentation and discussion of the model that links the various ways that foreign capital flows might have been related to saving, investment and growth in Tanzania.

4.6 The Model

The model which is presented in section 4.6.1 and used for the econometric analysis of the impact of foreign capital flows in the saving, investment and income growth in Tanzania resembles similar models used by Weisskopf (1972), Gupta (1975), Hyuha (1984), Mjema (1985), Bowles (1987) and Snyder (1990).

The model presented here, departs from models by Weisskopf (1972), Bowles (1987) and Snyder (1990) in that it is a simultaneous-equations model unlike the single equations models used by Weisskopf, Bowles and Snyder. The superiority of simultaneous equations models over single equation ones for variables such as the ones dealt with in this study has succinctly been explained by Gupta (1975) and Hyuha (1984). Gupta in particular observes that the use of single-equation rather than simultaneous-equation models in previous studies could have contributed to the prolonging of the controversy surrounding the impact of foreign capital flows on recipient's domestic savings rate.

However, the model presented here departs from the Gupta (1975) model in that, our model, like Hyuha's (1984) includes a specification of a separate investment equation. In a country like Tanzania where there is evidence (cf Mjema, 1985) to show that foreign capital flows have been financing investment activities, a specification of a separate investment function is justifiable.

The current model improves upon the Mjema (1985) model by including variables like total labour participating rate (TLPR) and population density (DEN) which have been found to be important in countries with similar economic characteristics like those obtaining in Tanzania (cf Hyuha, 1984). The economic rationale of including variables like TLPR and DEN is given by Leff and Sato (1975).

Finally, the model presented here, unlike the Hyuha model, includes the intermediate imports ratio (M/Y) in the savings and investment rate equations. The rationale of this inclusion is that, in Tanzania, investment performance could be constrained by imported

inputs and thus, the provision of intermediate imports has the potential to improve investment and domestic saving rates (cf Weisskopf, 1972). It is to be noted that no other study surveyed here had hitherto, explicitly examined the impact of intermediate imports in simultaneous equations model the way the current study does.

Before discussing in detail each one of the equations contained in the model, the entire system of equations is presented first.

4.6.1 The Simultaneous Equation Model

The model that is dealt with in this study has four (4) behavioural equations as follows:

$$(30) S/Y = a_{10} + a_{11}\, DY/Y + a_{12}\, Y/N + a_{13} F/Y + a_{14} M/Y + a_{15} r_1 + U_1$$

$$(31)\ DY/Y = a_{20} + a_{21} S/Y + a_{22} F/Y + U_2$$

$$(32)\ Y/N = a_{30} + a_{31}\, DY/Y + a_{32}\, DEN + a_{33}\, TLPR + U_3$$

$$(33)\ I/Y = a_{40} + a_{41}\, M/Y + a_{42}\, DY/Y + a_{43}\, F/Y + a_{44}\, r_2 + U_4$$

Where the endogenous variables in this model are:

S/Y = average savings rate

DY/Y =rate of income growth

Y/N = per capita income

I/Y = investment rate and; the pre-determined variables are:

F/Y = capital flows from abroad expressed as a ratio of gross

domestic product

TLPR = the total labour participating rate

DEN = Population density

M/Y = Intermediate imports expressed as a ratio of gross domestic product

r_1 = saving interest rate

r_2 = lending rate

The a_{ij} are the structural parameters of the model

The disturbance terms (i.e. $U_1, \ldots, U_4$) are assumed to satisfy the standard assumptions, that is:

(i) the mean of the error term is zero, i.e., $E(U_i) = 0$

(ii) different values of the error term are not correlated to each other i.e., $E(U_iU_j) = 0$

(iii) the error terms have a constant variance and

(iv) the error terms are not correlated with the explanatory variables, i.e., E(UiXi)=0

4.6.2 Identification; Functional Forms and other Econometric Aspects of the Model

4.6.2.1 Model Identification

In econometric literature, a model is said to be identified if it is in a unique statistical form enabling unique estimates of its parameters to be made from sample data. Model identification is a

problem of model formulation rather than that of model estimation (Maddala, 1992 pp.363-366).

Identification of an entire model requires the model to be complete, i.e., contain at least as many independent equations as endogenous variables and for each equation in it, to be either exactly or over identified (Maddala, 1992 pp.363-366). The formal rules for identification are the order and rank conditions.

For an equation to be identified using the order condition, the total number of variables (endogenous and exogenous) excluded from it must be equal to or greater than the number of endogenous variables in the model less one. Formally stated, the order rule can be put as:

$(K-M) \geq (G-1)$ where;

G = Total number of equations in the entire model

K = Number of total variables (endogenous and pre-determined) in the model

M = Number of variables, endogenous and exogenous included in a particular equation

Applying the above rank condition, our model shows that:

(i) the saving rate equation is exactly identified

(ii) the growth rate of income equation is over-identified

(iii) the per capita income equation is over-identified and,

(iv) the investment rate equation is over-identified.

These conditions satisfy the identification rules and enables the model to be simultaneously estimated.

4.6.2.2 Functional forms and Other Aspects of the Model

Equation (30) is the saving rate equation. The variables included in this equation are the per capita income (Y/N), the growth rate of income (DY/Y), foreign capital inflows as a ratio of gross domestic product (F/Y), ratio of intermediate imports to GDP i.e. (M/Y) and the lending interest rate.

Other things being equal, the per capita income is hypothesised to have a positive relationship with saving rate; and this relationship is supported as follows. As per capita incomes rise, part of it goes into consumption, while the other part is saved. Similarly, the growth rate of income is assumed to be positively related to the savings rate since, this variable is a potential source of both savings and investment.

The impact of foreign capital flows (F/Y) on the savings rate of recipients has been a topic of much disagreement as already shown in the literature review chapter. It is hypothesised here that if part of the foreign capital flows were used to supplement consumption, then, there is a possibility that the flows will be negatively related to the savings rate.

The intermediate import ratio (M/Y) is assumed to be positively related to the savings rate. The rationale behind this assumption is that for a country like Tanzania where under utilisation of production capacity is partly caused by shortages of imported inputs, the

importation of intermediate inputs leads to improved capacity utilisation. Eventually, government savings could be increased as a result of the improved capacity utilisation.

Equation (31) specify the growth rate of income equation. Two factors, i.e. the savings rate and the proportion of foreign capital to GDP (F/Y) are included in this equation. Essentially, these are, to use Gupta's (1975) terminology, "the sources of growth" factors. The two sources of growth factors are assumed to be positively related to the growth of income in equation (31).

Equation (32) is the per capita income equation. It is so specified that the main factors influencing this variable are the growth rate of income, the population density (DEN) and the total labour participating rate (TLPR). As the growth rate of income increases, it is expected that the per capita income will as well increase. The TLPR has a positive relation with per capita income while the DEN has a negative relationship with per capita income.

The investment equation (33) is influenced by the intermediate imports ratio (M/Y), the lending interest rate (r_1), foreign capital flows (as a ratio of GDP, that is (F/Y) and the growth rate of income (DY/Y). The lending rate and the investment rate are assumed to move in opposite directions. As the lending rate increases, potential borrowers are discouraged to borrow money from the lending institutions and thus they fail to undertake investment.

It is plausible to assume that for a country like Tanzania where, as discussed in the preceding sections, an increasing proportion of the investment effort has been made possible by the

flows of capital from abroad, the higher the flows of capital the higher the investment that will be undertaken.

4.7 Summary

Theoretically, foreign capital flows are expected to help a country to ease constraints such as savings and foreign exchange and allow a recipient to attain higher economic growth rates and finally reach targeted development goals. However, where capital flows substitute for the savings and investment resources of the recipient, the above expectation on capital flows may be frustrated.

In the case of Tanzania, there is no evidence to suggest that the government relaxed its tax efforts with the advent of foreign capital flows. To the contrary, the government undertook calculated efforts during the Arusha Declaration era aimed at mobilising domestic savings in order to supplement the incoming foreign capital resources. However, despite such efforts, the country's level of savings has from 1961 to 1985 remained low.

As Tanzania's domestic resources and its capacity to undertake large investments was financially constrained, various foreign capital donors were willing to step in and assist the country in that regard. Thus, the 1970s saw an investment expansion in Tanzania undertaken with the assistance of foreign capital in the form of loans and grants. This investment drive did not enable the country to realize the expected high growth because, with the onset of the foreign exchange problems that the country faced, most of these

projects could not import critical inputs. Hence, they experienced capacity under utilisation problems.

This chapter has thus specified a model which links the various channels through which foreign capital flows could have affected the country's saving, investment and income growth. The major hypotheses to be tested remain those stated under section 1.6 of chapter I. Having specified the model, a stage has now been set where the impact of capital flows from abroad on the mentioned variables in Tanzania in the 1961-1985 period can be quantitatively examined. This will be done in the following chapter.

CHAPTER V

AN ECONOMETRIC ANALYSIS OF THE IMPACT OF FOREIGN CAPITAL FLOWS ON SAVINGS, INVESTMENT AND GROWTH IN TANZANIA

5.1 Introduction

In the early 1970s, various researchers (like Griffin and Enos 1970 etc.) had observed a negative correlation between foreign capital flows and domestic savings rates in a number of recipient countries.

On one hand it was argued that the aid recipient governments, tended to reduce their tax efforts (i.e. reduce the tax burden to her citizens) thus inevitably reduce government savings when more foreign capital was realised.[95] On the other hand, the recipient could alter the composition of its expenditure in favour of consumption and hence less savings when it is faced with increased foreign assistance.[96]

Much as the above explanations became conventional, the existing foreign aid literature has not sufficiently dealt with the cause of this negative relationship between inflows of foreign capital and domestic savings in some recipient countries.

This chapter investigates (qualitatively) by using data from Tanzania, whether a negative or positive relationship between foreign capital flows and domestic savings and investment can be found. The data used in the current study is a time series data and departs from models applied elsewhere which used cross-sectional data. Following the methodology suggested by Granger (1967) and Sims

95 P. Bowles (1987).
96 See for example M. Rahman (1968).

(1972) and subsequently applied by researchers like Bowles (1987), this study sets also to find out which of the two variables (domestic savings and foreign capital flows) precedes the other.

This chapter will also investigate quantitatively the relationship between foreign assistance and economic growth in Tanzania during the 1961-1985 period. Before the presentation of various econometric results obtained, a brief discussion of the data that was used in this study is necessary.

5.2 The Data

5.2.1 Data Sources

The data that was used in this study has been obtained from various domestic and foreign sources. Data for the Gross Domestic Product (GDP), Gross Fixed Capital Formation (GFCF, a proxy for investment) and that for Gross Domestic Savings (Sd) has been obtained from the Bureau of Statistics (Planning Commission), as well as from various issues of Economic Survey (issued by the Planning Commission). Data for savings and lending interest rates (r_1 and r_2 respectively) and intermediate imports (M) was obtained from various issues of Economic and Operations Report issued by the Bank of Tanzania (BOT).

Data for Foreign capital flows (F) was obtained from various issues of Geographical Distribution of Aid to Less Developed Countries issued by the Organization for Economic Co-operation and Development (OECD). This data source, categorises capital flows to LDCs including Tanzania into loan and grant categories but the data

is reported in United States dollars (US $). This had to be converted into Tanzanian shillings using the (end-of-period) exchange rates provided by the International Financial Statistics issued by the International Monetary Fund (IMF). Other sources of data used in this study have been cited at the bottom of each table.

However, the data contained in this study suffers from most of the problems of data from developing countries cited by other studies (see for instance Lane, 1984). It is against this background that the econometric results obtained from the data should be carefully interpretated.

5.3 Econometric Results

5.3.1 Simultaneous Equation Results

As it has been shown in the preceding Chapter, most of the equations contained in the model presented in section 4.6.1 are either exactly identified or over identified. Thus the appropriate technique for solving a simultaneous equation model such as the one presented in Chapter IV is the Two Stage Least Squares (2SLS). In the terminology of Wonnacott and Wonnacott (1989), the "over-supply of instrumental variables" is solved by the 2SLS technique by taking "linear combinations of original instrumental variables in the first stage" (p. 294). Table 11 presents the results obtained after using the 2SLS in the model presented.

Table 11: Simultaneous Equation Regression Results
Sample Period: 1961-1985

(34) $S/Y = -3.5 + 0.11\ DY/Y + 0.38\ M/Y + 0.006\ Y/N + 0.07\ r_1 - 0.028\ F/Y$
(-0.6) (0.17) (2.8) (1.08) (0.8) (-3.2)

$R^2 = 0.38$
DW = 1.9

(35) $DY/Y = 6.3 + 0.95\ S/Y + 0.78\ F/Y$
(5.2) (5.8) (5.2)

$R^2 = 0.87$
DW = 1.8

(36) $Y/N = 52.5 + 5.8\ DY/Y + 0.82 TLPR - 0.04\ DEN$
(11.5) (2.9) (0.02) (-0.5)

$R^2 = 0.79$
DW = 1.9

(37) $I/Y = 23.1 + 0.61\ DY/Y + 1.5\ F/Y + 0.05\ M/Y - 0.75\ r_2$
(7.2) (3.7) (4.3) (3.3) (-4.8)

$R^2 = 0.95$
DW = 1.8

Notes: S/Y = savings ratio
M/Y = intermediate imports as a ratio of gdp
TLPR = total labour participating rate
DEN = population density
DY/Y = growth rate of income
Y/N = per capita income
I/Y = investment ratio
F/Y = foreign capital flows as a ratio of gdp
r_1 = borrowing interest rate
r_2 = lending interest rate

Table 11 (equation 34) shows among other things that the (direct) impact of foreign capital flows (F/Y) on the domestic saving rate (S/Y) in Tanzania and for the 1961-1985 period was negative (i.e. -0.028) and significant at the 5 percent level.

Equation 34 in this table also shows that both the growth rate of income (DY/Y), the intermediate imports ratio (M/Y) and the per capita income (Y/N) variables had the predicted positive impact on the domestic saving ratio in Tanzania.

The impact of foreign capital flows on the growth rate of income is observed in Table 11 (equation 35) to be positive and significant at 5 percent level of test. The other "sources of growth" variable that is, the saving ratio also had a positive and significant impact on the growth rate of income variable.

Table 11 (equation 36) further shows that both the growth rate of income (DY/Y) and the total labour participating rate (TLPR) had a positive impact on per capita income in Tanzania during the period under consideration. On the other hand, the impact of population density (DEN) on per capita income in Tanzania was negative but insignificant at the conventional level of test.

Finally, equation 37 in Table 11 shows that, as hypothesised, both the growth rate of income (DY/Y), foreign capital flows (F/Y) and the intermediate imports ratio (M/Y) had a positive and significant impact on the investment rate (I/Y) in Tanzania during the period under consideration. With respect to the observed positive impact of foreign capital flows on investment ratio, the result seem to be plausible if it is articulated that a large part of investments in

Tanzania and particularly during the period under review were financed by foreign capital.

5.3.2 The Total Impact of Predetermined Variables on Endogenous Variables

As is well known, the coefficients appearing in Table 11 are the direct impacts of exogenous variables on the relevant endogenous variables. Thus for example, the coefficient -0.028 in equation 43 of Table 11 indicate the direct impact of foreign capital flows (F/Y) on domestic saving rate (S/Y) in Tanzania. To get an idea of the total impact (i.e. direct and indirect) impact of the predetermined variables on endogenous variables, the reduced form of the simultaneous equations in Table 11 was calculated (cf Maddala 1992, pp. 358-360). Table 12 summarises the resultant reduced form estimates of the relevant variables.

Table 12: The Reduced - Form of the Simultaneous Equation Model

Endogenous Variables	Exogenous Variables						
	Constant	F/Y	M/Y	r_1	r_2	TLPR	DEN
S/Y	6.4	-0.0022	0.015	0.0004	0.001	0.021	-0.006
DY/Y	-3.8	0.0041	0.05	0.0062	0.003	0.042	-0.005
Y/N	620.12	-0.0037	0.04	0.0052	0.0024	0.122	-0.012
I/Y	10.2	0.0342	0.42	-0.0062	-0.041	0.032	-0.005

Source: Calculated from Table 11

If a comparison is made between coefficients in Table 11 and those in Table 12 it is observed that, in general the latter coefficients are rather smaller compared to the former. For instance, the reduced-form coefficient on the impact of foreign capital flow on domestic saving is - 0.0022, while the direct impact of this variable (in Table 11) was -0.28.

A comparison between the reduced-form estimates (Table 12) and the estimates in Table 11 shows for example that the negative impact of foreign capital flows on domestic saving rate in Tanzania has been considerably reduced. Similarly, the total impact of foreign capital flows on the growth rate of income (DY/Y) and investment rate (I/Y) is, in terms of magnitude, smaller than the direct impact of foreign capital flow on DY/Y and I/Y variables in Table 11.

There is, in general, a significant difference between estimates reported in Table 11 and those in Table 12 where the magnitude of the impact of exogenous variables on endogenous variables is concerned. The difference in these estimates, as both Gupta (1975) and Hyuha (1984) have noted, is accounted for by the fact that whereas structural coefficients explain only direct impacts, reduced form coefficients take care of both direct as well as indirect impacts of predetermined variables on endogenous variables.

5.3.3 Elasticity Multipliers

Following the methodology used by Gupta (1975) Hyuha (1984) and Mjema (1985), elasticity multipliers, whose aim is to act as a base for comparing different impact multipliers, were computed. The process of calculating elasticity multipliers involves the impact multipliers in Table 12 and the arithmetic means of the relevant variables (Gupta, 1975 and Hyuha, 1984). Table 13 presents the computed elasticity multipliers.

Table 13: Elasticity Multipliers

Endogenous variables	Exogenous variables					
	F/Y	M/Y	r_1	r_2	TLPR	DEN
S/Y	-0.0031	0.02	0.000	0.04	0.21	-0.311
DY/Y	0.073	0.212	0.0011	0.330	0.82	-0.820
Y/N	0.0001	0.321	0.0000	0.021	0.110	-0.4230
I/Y	0.002	0.037	-0.003	-0.31	0.212	-0.523

Source: Calculated from Reduced - Form estimates in Table 12 and the arithmetic means of the relevant variables.

Table 13 shows among other things that, all elasticity multipliers of the variables included in the model are less than unity in absolute values. That implies that the endogenous variables considered in the model (i.e. S/Y, DY/Y, Y/N and I/Y) are generally inelastic with respect to the exogenous variables. Table 13 shows also that the population density (DEN) has a considerable negative

impact on both growth rate of income, savings rate and per capita income variables.

A comparison of the direct impact (in Table 11) and the total impact (in Table 13) of foreign capital flows on domestic saving rate shows that the total impact, though still negative, is very small compared to the direct impact.

This observation seem to support Gupta's (1975) observation that the use of single equation estimates might have contributed to the prolonging of the debate on the impact of foreign capital flows on domestic saving of recipient countries.

5.3.4 Econometric Problems Encountered During Estimation

One of the frequently encountered econometric problems encountered during the process of estimating the equations was that of auto correlation. This problem was circumvented by using the Box-Jenkins (1970) iterative procedure. The results shown in the previous section were reported after correcting for auto correlation. Multicollinearity was not observed to be a serious problem and hence nothing was done to circumvent it. In the following section, tests for structural break are conducted.

5.4 Testing for Structural Break

In both Chapters II and IV it was urged that trends in the savings and investment in Tanzania for the 1961-1985 period tend to suggest the existence of a structural break in the early 1970s. The

purpose of this sub-section is to test for the existence of this break by using the Chow-Test. The details of this test appear in Appendix I.

The Chow-Test was applied to the savings rate equation for periods between 1961-1990 and then for two sub-periods i.e. 1961-1971 and 1972-1990. As for the per capita income, the growth rate of income and the investment rate equations, the periods were 1961-1984 and 1961-1971 and 1972-1989 respectively. The results obtained are summarised in the following table.

Table 14: Results of Structural Break Tests

I The Savings rate equation

Period: 1961-1990

(38a) $S/Y = 1.9 + 0.37DY/Y + 0.62\ M/Y + 0.001\ Y/N - 0.21\ F/Y + 0.7\ r_1$
(4.2) (0.7) (3.1) (0.9) (-4.3) (3.1)

$R^2 = 0.71$
DW = 1.9

Period: 1961-1971

(38b) $S/Y = 1.5 + 0.61\ DY/Y + 0.72\ M/Y + 0.14\ Y/N - 0.17\ F/Y - 0.07\ r_1$
(3.1) (2.7) (4.0) (0.7) (-1.6) (-1.2)

$R^2 = 0.76$
DW = 2.1

Period: 1972-1990

(38c) $S/Y = -2.5 + 0.47\ DY/Y + 2.1\ M/Y + 0.05\ Y/N - 0.31\ F/Y + 0.02\ r_1$
(-1.7) (1.6) (3.9) (0.1) (-0.3) (0.5)

$R^2 = 0.61$
DW = 2.2

$$F^{**} = \frac{S5/k}{S_4/(N_1+N_2-2k)} = 5.2$$

$$F^{*} = 3.5$$

II The growth rate of income equation

Period: 1961-1989

(39a) $DY/Y = 4.6 + 0.32\,S/Y + 0.71\,F/Y$ $\quad R^2 = 0.79$
(3.1) (3.2) (3.4) $\quad DW = 2.1$

Period: 1961-1971

(39b) $DY/Y = 4.9 + 1.7\,S/Y + 3.7\,FY$ $\quad R^2 = 0.85$
(3.1) (5.2) (1.7) $\quad DW = 1.9$

Period: 1972-1989

(39c) $DY/Y = 1.6 + 0.4\,S/Y + 2.5\,F/Y$ $\quad R^2 = 0.62$
(0.2) (2.7) (2.0) $\quad DW = 1.9$

$$F^{**} = \frac{S_5/k}{S_4(N_1+N_2-2k)} = 4.01$$

$$F^{*} = 3.5$$

III The per capita income equation

Period: 1961-1989

(40a) $Y/N = 71.2 + 1.6\ DY/Y + 0.05TLPR - 0.001DEN$ $\quad R^2 = 0.75$
(3.5) (2.2) (0.6) (-0.2) $\quad DW = 1.7$

Period: 1961-1971

(40b) $Y/N = 14.6 + 2.5\ DY/Y + 0.07TLPR - 0.02\ DEN$ $\quad R^2 = 0.81$
(2.1) (2.5) (0.2) (-0.4) $\quad DW = 1.9$

Period: 1972-1989

(40c) $Y/N = 3.5 + 4.0DY/Y + 0.014TLPR - 0.01DEN$ $\quad R^2 = 0.65$
(2.0) (1.3) (0.3) (-0.03) $\quad DW = 1.7$

$$F^{**} = \frac{S_5/k}{S_4(N_1+N_2-2k)} = 4.7$$

$$F^{*} = 3.5$$

IV. The Investment Rate Equation

Period: 1961-1989

(41a) $I/Y = 10.2 + 0.4\ DY/Y - 1.7\ F/Y + 2.2\ M/Y - 0.72\ r_2$ $\quad R^2 = 0.82$
(3.1) (2.4) (2.1) (1.4) (-3.6) $\quad DW = 2.1$

Period: 1961-1971

(41b) $I/Y = 9.7 + 2.1\ DY/Y + 2.01\ F/Y + 3.2\ M/Y - 0.6\ r_2$ $\quad R^2 = 0.72$
(1.2) (1.7) (1.3) (0.8) (-0.2) $\quad DW = 2.3$

Period: 1972-1989

(41c) $I/Y = 0.2 + 2.6\ DY/Y + 2.3\ F/Y + 2.9\ M/Y - 0.3r_2$ $R^2 = 0.75$

(0.1) (1.7) (0.5) (-0.1) (-0.2) DW = 2.1

$$F^{**} = \frac{S_5/k}{S_4(N_1+N_2-2k)} = 3.6$$

$$F^{*} = 3.5$$

Notes: S/Y = savings rate
DY/Y = growth rate of income
M/Y = intermediate imports as a ratio of gdp
Y/N = per capita income
I/Y = investment rate
F/Y = foreign capital flows as a ratio of gdp
r_1 = borrowing interest rate
r_2 = lending interest rate
TLPR = total labour participating rate
DEN = population density
F** = calculated F statistic
F* = tabulated F statistic

The results of Table 14 confirms that there was in Tanzania, a structural break in 1971 and the Chow-test used to carry out this test indicates a structural break around the year 1971. This suggests that the two sub-periods are structurally different. In the following sub-section, some aspects of precedence between foreign capital flows and domestic savings in Tanzania during the period under consideration are discussed.

5.5 Precedence Tests

In the literature review chapter, it was mentioned that the gist of the current debate on the impact of foreign capital flows on the

recipient countries hinges on whether it was the foreign capital resources which were preceding domestic savings or whether the recipient countries were obtaining the resources because to begin with, they had low savings.[97] This section aims at contributing to this debate and situate the analysis within the Tanzanian context.

5.5.1 Definition of Precedence

Granger's (1969) definition of precedence is employed in this study. According to Granger, if after extracting all the information from own past values of a variable, the addition of another variable as a regressor would further reduce the prediction error variance, then the latter variable is said to precede the former. By using the above definition, this study has set a single bivariate model to test the precedence between foreign capital flows and domestic savings in Tanzania for the 1961-1985 period. The bivariate model for this test is:

(42) S/Y = sum alpha j (A/Y)t-j + Sum beta j (S/Y)t-1 + Et

(43) A/Yt = sum gamma j (S/Y)t-j + Sum lambda j (A/Y)t-1 + Ut

Where: (S/Y) = savings rate

(A/Y) = ratio of foreign capital flows to GDP

Notes : The error terms Et and Ut are not correlated i.e.

E(EtUt)=0

97 See K. Griffin (1970).

5.5.2 Precedence Test Results

After applying the conventional OLS estimation technique to the model above, the results shown in Table 15 were obtained.

Table 15: The precedence test results

Sample period: 1961-1985

(44) $S/Y = 0.15 - 0.4\ (A/Y)t\text{-}1 + 0.47\ (S/Y)t\text{-}1$
(3.5) (-2.2) (0.19)

$R^2 = 0.33$
DW = 2.1

(45) $F/Y = 0.14 - 0.61\ (S/Y)t\text{-}1 + 0.29\ (F/Y)t\text{-}1$
(2.7) (-2.1) (1.4)

$R^2 = 0.48$
DW = 2.2

Notes: F/Y = foreign capital flows as a ratio of GDP

S/Y = savings ratio.

The results contained in Table 15 shows that the alpha coefficient is negative (-0.4) and significant at the 5 per cent level of test suggesting that it was the low savings which preceded foreign capital flows and thus support the Griffin (1970) hypothesis that under such circumstances, foreign donors increase foreign assistance in response to the low domestic savings of needy countries like

Tanzania. A study by Bowles (1987) seems to support this hypothesis as well.

5.6 Summary

The main objective of this chapter was to analyse the impact of foreign capital flows on savings, per capita income, growth rate of income and investment rates in Tanzania during the 1961-1985 period.

The qualitative analysis carried out in this chapter has revealed four things. First, during the stated period of time foreign assistance flows to Tanzania tended to be negatively related to the domestic savings in Tanzania. This result seems to be line with earlier findings (Mjema, 1985) done on Tanzania for the 1966-1982 period and those by Bowles (1987) on Tanzania for the 1961-1985 period.[98]

Secondly, for the same period of time, foreign capital flows to Tanzania tended to be positively related to the growth rate of income in Tanzania. As mentioned earlier, these resources tend to expand the production possibility frontier and hence the possibilities of increasing the rate of growth of income.

Thirdly, during the same period of time, the foreign capital resources tended to be positively related to the per capita income in Tanzania. The results for this test were insignificant at the conventional 5 per cent level. Finally, with regard to the investment rate, the results obtained showed that there was a positive relationship between foreign capital flows and the investment effort in Tanzania. This result is plausible given the fact that during the

98 See P. Bowles op.cit.

1970s and early 1980s especially during the Basic Industrial Strategy era (BIS) most investments were financed through foreign capital flows.

As for the precedence tests, the results obtained in this chapter seem to point at precedence running from low domestic savings to foreign capital flows. In other words it was the low domestic savings in Tanzania which preceded the inflows of foreign capital in Tanzania. It should be pointed out that these results are only suggestive, and may point at the need for more research work to be conducted in this field of study. One such area needed in future research work is to try to establish the effect of foreign capital flows on the productivity of foreign financed projects. The results obtained enable us to draw a number of important policy implications relevant to the Tanzanian situation where foreign capital flows are concerned. This is done in the following chapter.

CHAPTER VI

CONCLUSION AND POLICY IMPLICATIONS

6.1 Major Findings of Importance

The aim of this study was to attempt to examine the impact of foreign capital flows on savings, investment and income growth in Tanzania for the 1961-1985 period. This particular period became of interest and hence singled out for analysis because there was evidence which showed that the amount and type of foreign capital flows that the country received during this period was significant both in amount and in loan terms. This evidence was extensively cited in Chapter II.

Compared to other recipients which face almost similar economic conditions to those obtaining in Tanzania for example those in the Sub-Sahara (SSA) category, the analysis in Chapter II shows apparently that, Tanzania did receive a substantial part of its assistance in form of grants. Even her loans were obtained at relatively lower interest and with longer maturity and grace periods. In connection with the impact of this assistance received at these rather 'better' terms on the economic growth in Tanzania, the current study has made several findings of significance. In the following sub-sections, a brief discussion of these findings is made.

6.1.1 Foreign Capital Flows and its Impact on Domestic Savings in Tanzania

First, regarding the impact of foreign capital flows on the domestic savings effort in Tanzania during the period under investigation, econometric results have shown that there was a negative relationship between the foreign capital flows and domestic savings of her country. In economic literature surveyed in Chapter III, part of the reduction in government savings effort due to increased foreign capital flows was caused by the recipient government propensity to lower their tax efforts as additional foreign capital resources were realised.[99]

In Tanzania however, our analysis does not seem to point to a reduction of Tanzania's tax effort as the contributing factor for foreign capital flows substituting for domestic savings. Lipumba and Osoro (1990) have observed that the tax effort, during the same time as foreign capital flows were increasing, was actually rising.

A plausible mechanism which can help to explain the negative relationship between domestic savings and foreign capital flows is that, periods of increased foreign capital flows to Tanzania tended to be the same periods that Tanzania was facing economic difficulties. This necessitated the 'diversion' of foreign capital flows to the importation of consumption goods such as food.

To cite an example, a considerable amount of foreign capital resources were used to finance the importation of food in 1973/74 and early 1980s when the country was hit by a series of droughts

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99 See M. Rahman (1968).

that were followed by acute food shortages. As suggested in Chapter II, foreign capital resources initially intended for investment and which might have, in the absence of this 'diversion' led to Tanzania's economic growth, were instead, switched to consumption purposes. Under such circumstances, it is not surprising to obtain results which indicate a negative relationship between foreign capital and domestic savings.[100]

In other studies[101] , it has been shown that where foreign assistance has been utilized for conspicuous consumption purposes, it might help to explain the negative relationship between foreign capital and domestic saving rates of recipient countries. This claim might be true for some LDCs but this study has found no significant evidence to suggest that foreign capital flows to Tanzania during this period were used for conspicuous consumption purposes.

6.1.2 Relationship Between Foreign Capital flows and Investment Efforts in Tanzania

The second observation made in this study is that during the period under investigation, the impact of foreign capital resources on investment efforts in Tanzania was observed to be positive and significant at the conventional 5 per cent level of significance. This result can be rationalized in the following setting.

100 See for example P. Bowles (1987).
101 K. Griffin and J. Enos (1970).

In its struggle to change the structure of production inherited from her colonial past, the country decided to put more emphasis on the development of industries. These basic industries were planned not only to generate employment for the Tanzanian population but also to produce goods for domestic consumption and thereby reduce the country's dependence on foreign goods. However, the industrial infrastructure, as explained in the previous chapters, could only be developed by use of foreign capital flows because, being a poor country, Tanzania lacked sufficient domestic investment resources of her own. Thus, foreign loans and grants from bilateral as well as multilateral donors financed most of the investments of the early 1970s and 1980s.

Foreign capital flows were particularly essential in Tanzania's industrial investment programme since the mid 1970s. The government adopted in 1974, the Basic Industrial Strategy (BIS) and this strategy played a significant role in channelling investible resources, especially foreign capital resources into the industrial sector. The manufacturing sector for instance received during the BIS era, the largest share of foreign capital resources funded by several donor agencies.

In reference to the discussion in Chapter II concerning trends in the investment efforts in Tanzania, it becomes clear that the BIS programme was the main reason leading to rapid increase in the share of monetary gross fixed capital formation after 1973. In average terms, this share increased from less than 20 per cent in 1970-73 to more than 45 per cent in the 1978-1985 period.

6.1.3 Relationship Between Foreign Capital Flows and Income Growth

The econometric results in Chapter IV have shown that there was a positive but weak relationship between foreign capital flows and the growth rate of income in Tanzania during the period under consideration. This positive but weak relationship between foreign capital flows and income growth could be explained by the fact that the productivity of most of the foreign financed investments were not high enough as to positively affect income growth.

The low productivity of these investments in turn, could be explained by the persistence of the economic crisis which brought about, among other things, shortages of foreign exchange. As a consequence of foreign exchange shortages, many firms were faced with under-capacity utilisation problems. In summary form, key econometric results obtained in this study are shown in Table 16.

Table 16: Summary of Relationships Between foreign Capital flows and Savings, Investment and Income Growth Rates in Tanzania

Sample period	Variable	Impact of foreign capital flows on variable
1961 - 1985	S/Y	-0.028 (-3.2) *
1961 - 1985	DY/Y	0.78 (5.2) *
1961 - 1985	I/Y	1.5 (4.3)*

Source: Summarised from Table 11.

Notes: S/Y = savings rate
DY/Y = growth rate of income
I/Y = investment as a ratio of gdp
F/Y = foreign capital flows as a ratio of gdp
figures below each coefficient are t-ratios
* indicates significance at 5 per cent level of test

6.1.4 Occurrence of a Structural Break

Trends in the savings, investment and gross domestic product observed earlier in Chapter II pointed to an existence of a structural break in the early 1970s. When the Chow-test was conducted, the results confirmed the occurrence of a structural break in 1971. This suggests that the regression analysis covering the 1961-1971 period is structurally different from that covering the period 1971-1990.

6.1.5 Precedence Between Foreign Capital flows and Domestic Savings

Simple statistical tests for precedence as suggested by Granger (1967) and Sims (1972) have indicated that for the case of Tanzania, it is the low savings which precede the foreign capital flows. This result is in line with the results obtained by Bowles (1987) for the case of Tanzania during the 1961-1984 period. What this result suggests is that foreign donors were supplying capital resources to Tanzania in response to the prevailing low domestic savings. However, as suggested in the introductory Chapter, there are various reasons for extending assistance to recipient countries.

6.1.6 Foreign Capital flows and Tanzania's Debt Problems

The other observation concerns Tanzania's debt problem. A country's indebtedness is a direct result of borrowing from other countries and institutions. Indebtedness to a country would not exist if a recipient received from foreign capital assistance in form of grants only. Indebtedness becomes a problem to the borrowing country when it can not service its debts, that is, the principal and interest payments. For the case of Tanzania, unlike in most other recipient LDCs, nearly all of its debt is public debt that has been guaranteed by the government.[102]

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102 See W. Lyakurwa (1990).

World Bank data suggests that, for the 1961-1970 period, Tanzania's export earnings could service the debt. The debt problem in Tanzania escalated to crisis proportions in the late 1970s. By 1978 for instance an accumulation of payment arrears totalling nearly US $ 63m was recorded. Since then, a combination of debt service problems caused by the country's dwindling export earnings and hardening borrowing terms have worsened the country's foreign debt.

For most of the period under investigation, the World Bank was the most important supplier of multilateral assistance to Tanzania. In particular, the Bank's IDA affiliate did finance a number of projects within the country by issuing loans at commercial rates of interest. In retrospect, the economic rationality of some of these IDA funded projects has been questioned.[103] Further, it is not known for example why the country was encouraged to accept IDA loans at commercial rates while there could possibly be other sources willing to offer loans at more concessional terms.

6.2 Policy Implications

The investigation of the impact of foreign capital flows on the savings, investment and income growth in Tanzania during the 1961-1985 period tends to point at four major policy implications, viz.;

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103 See for example R. Skarstein et al (1988).

(i) in order for foreign capital flows to have a positive impact on Tanzania's domestic savings, the Tanzanian government need to make deliberate efforts aimed at raising its domestic capacity to save. For example, the government through commercial and other banking institutions, could undertake interest rate policies which are more attractive to savers. If for instance commercial banks offered savers a rate of interest which is above the inflation rate (i.e. positive real interest rate), more savers could be attracted by this rate, and, ultimately the volume of savings could finally rise.

The above measure is important because in 'success' cases like Singapore, South Korea and Taiwan where foreign capital flows was said to have maximum positive effect on domestic savings, there were concerned efforts to increase their savings ratios. When foreign capital resources were realised, they only complemented the existing domestic saving efforts. Tanzania could emulate some of the steps in the mentioned countries like for example, introducing reforms within the financial sector.

(ii) Policies aimed at raising domestic savings in Tanzania should be carried out simultaneously with policies aimed at making financial intermediaries efficient enough to channel the realised savings in the most productive investment ventures. This measure may call for not only less government intervention in the activities of financial intermediaries but also increased decision making ability to these units.

(iii) Equally important is for the Tanzanian government to see to it that the incoming foreign capital flows from various sources are efficiently and optimally used. Foreign capital resources should not

be used in projects and programmes of dubious economic rationality. Instead, before such public projects are financed using foreign capital resources, a sound project analysis should be carried out. The projects to be supported should take into account national objectives and long term targets. This may call for the establishment of an institution which co-ordinates the foreign capital resources and channel them into the desired and efficient projects.

(iv) also, there is an urgent need to manage Tanzania's external debt, for, if unchecked, it may threaten the country's economic growth. The first and foremost step is for the government to take stock of the magnitude of the existing debt stock it owes other governments and institutions.

Currently, there is every indication that the government of Tanzania does not know exactly how much it owes its creditors. This is because, the Bank of Tanzania which is supposed to have this information, is still at an infant stage of the compilation of the country's external debt. Worse still, the current heavy reliance on World Bank data leaves much to be desired. A careful examination of this data shows that it is not consistent and the published stock of debt seems to be increasing with every new publication as if creditors were increasing it at will.

6.3 Concluding Remarks

In Tanzania, as is true of many other developing countries, foreign capital resources in either grant or loan forms are likely to continue to play an important role in its economic growth. This is

because the essential elements needed for rapid and sustained economic growth can not be produced domestically but have to be imported using foreign capital.

When foreign capital resources are efficiently used in recipient countries, there is the possibility of improving growth and reduction of dependence on foreign capital resources. For this reason, there is an urgent need for Tanzania to optimally utilise the foreign capital resources being made available. Finally, there is need for further research to establish why foreign capital resources were negatively related to Tanzania's saving rate.

Appendix I: The Chow-Test for Structural Break

The Chow Test (see Gujarati (1987)) is based on two assumptions, viz., the disturbance terms in the involved regressions are normally distributed with zero mean and constant (homoscedastic) variance, and that the disturbance terms of the regressions are independently distributed. Four steps involved in carrying out the Chow-Test are:

(i) Combine all observations of the two periods and run the single 'pooled' regression. From this regression, the residual sum of squares (RSS) S_1 is obtained with $N_1 + N_2 - k$ degrees of freedom, where k is the number of parameters estimated. N_1 and N_2 are the observations.

(ii) Run the two individual regressions and obtain S_2 and S_3 separately with $N_1 - k$ and $N_2 - k$ degrees of freedom respectively. Add the two separate residual sum of squares, i.e.:

$S_4 = S_2 + S_3$ with the degrees of freedom from this combination being: $N_1 + N_2 - 2k$

(iii) Obtain $S_5 = S_1 - S_4$

(iv) Apply the F test as follows:

$$F = \frac{S_5/k}{S_4/(N_1 + N_2 - 2k)}$$

If the computed F exceed the critical F at k and $N_1 + N_2 - 2k$ degrees of freedom, reject the hypothesis that the two regressions are the same and hence accept the existence of a structural break.

Appendix II: The Granger Precedence Test

A variable proceeds another in Granger's sense if it explains the residuals of another variable which can not be explained by the history of that explained variable.

Consider a bivariate model of the following form:

(A) X_t = sum alpha j Y_{t-1} + Sum beta j X_{t-1} + E_t

(B) Y_t = sum gamma j X_{t-1} + Sum lambda j Y_{t-1} + U_t

Where: X_t and Y_t are the variables of interest and

Y_{t-1} and X_{t-1} are lags on these variables

Note : It is assumed that the disturbance terms Et and Ut are not correlated to one another i.e. $E(E_t U_t) = O$.

Precedence in Granger's sense can be determined by observing the size of the coefficients alpha j and gamma j. If alpha j is positive, then variable Y_t in equation A (above) precedes X_t. That is, after allowing for the past history of variable Y_t, the addition of variable Y_t enables us to better predict X_t. Similarly, if gamma j is positive, then X_t precedes Y_t. If however both alpha j and gamma j are positive, then a feedback or a bi-directional precedence takes place. In the above model, instantaneous precedence is said to occur if the inclusion of Y_t may be improving the goodness of fit of X_t.

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