THE IMPACT OF FOREIGN CAPITAL INFLOWS ON THE KENYAN ECONOMY

By

MWAU, G.N.

Research Paper submitted to the Department of Economics, University of Nairobi, in Partial Fulfilment of the Requirements For the Degree of Master of Arts in Economics.

June, 1984.

This Research Paper is my original work and has not been presented for a degree in any other University.

MWAU, G.N.

This Research Paper has been submitted for examination with our approval as University Supervisors.

Prof. T.C.I. Ryan

Dr. R.L. Sharma

TABLE OF CONTENTS

LIST OF TABLES

ACKNOWLEDGEMENTS

My greatest debt in writing this research paper goes to my first supervisor, Professor T.C.I. Ryan for his very useful suggestions and comments. His infinite desire to "see me through" was a great source of encouragement and determination. I am also grateful to my second supervisor, Dr. R.L. Sharma, for going through my Chapters and his useful comments.

Special thanks to the Director of Research, Central Bank of Kenya, Dr. A. Mulei, for his assistance in enabling me to conduct this research in the Bank. I am particularly indebted to W. Kinyua and A. Meso of the Bank with whom I worked directly.

I cannot fail to mention my parents, whose prayers gave me hope and confidence. There is also an endless list of friends and companions who contributed either directly or indirectly to the success in my studies. I thank them too.

Finally, I thank the Canadian taxpayer, by whose courtesy through the International Development Research Centre (IDRC), I obtained the scholarship to finance my entire stay at the University.

ABSTRACT

The main objective of this research paper was to attempt to analyse the impact of foreign capital inflows on the Kenyan economy. We also addressed ourselves to the problem of data availability and other limitations which would be faced in undertaking such an exercise.

We found that there are potential sources from which we can obtain all the data required. However, the data currently available from these sources were not suitable for balance of payments analysis except those from the Central Bureau of Statistics (CBS). The CBS data, though weak in certain respects, could nevertheless be used for analysis but their limitations have to be borne in mind.

Using the CBS data (the best available) we examined the effects of foreign capital inflows on investment, foreign trade and hence balance of payments, money supply and economic growth in Kenya.

The results showed that although foreign capital inflows have some stimulatory effects on domestic investment, their effects on economic growth are small. Without taking into account outflows consequent on

investment income and illicit transfers, private capital inflows had a positive effect on the balance of payments. This effect however could be negative if we consider these other outflows. Public capital inflows had a negative effect on the balance of payments. The effect of both types of capital inflows on money supply was to increase it but this did not greatly contribute to inflation.

These results tended to support other partial studies done in Kenya and also some of the studies done in other countries. However, despite the statistical significance of capital inflows as explanatory variables, the data shortcomings forestall us from making precise policy prescriptions.

CHAPTER ONE

INTRODUCTION

1.1 Introduction to the Problem

Foreign capital inflows are a major form of resource transfer from the developed to the developing countries. They help to augment the resources currently available to the recipient country, thereby sustaining higher rates of economic growth. There is in return an obligation to relinquish part of the resources available in future to repay the debt created as a result of the transfer. This being the case, it is imperative that the resources so obtained should be put into productive use so that enough income is generated to repay the debt and leave the country with a net economic benefit.

There has been a lot of concern over the role of foreign capital inflows in promoting growth and development in the developing countries. The available literature (see Chapter Two) is however notable for its conflicting findings on the impact of foreign capital inflows in the economies of the developing countries. In some countries, foreign capital inflows have been found to have had positive effects while in others they have negative.

CHAPTER ONE

INTRODUCTION

1.1 Introduction to the Problem

Foreign capital inflows are a major form of resource transfer from the developed to the developing countries. They help to augment the resources currently available to the recipient country, thereby sustaining higher rates of economic growth. There is in return an obligation to relinquish part of the resources available in future to repay the debt created as a result of the transfer. This being the case, it is imperative that the resources so obtained should be put into productive use so that enough income is generated to repay the debt and leave the country with a net economic benefit.

There has been a lot of concern over the role of foreign capital inflows in promoting growth and development in the developing countries. The available literature (see Chapter Two) is however notable for its conflicting findings on the impact of foreign capital inflows in the economies of the developing countries. In some countries, foreign capital inflows have been found to have had positive effects while in others they have negative.

Similar results have also been found from cross-country studies. From these studies, some authors have concluded that foreign capital inflows have contributed to the growth of the recipient countries. Others argue that they do not. Recent studies have attributed these conflicting findings to factors such as inadequate methods of estimation, use of illegitimate statistics and deficiencies in the statistics themselves. Also, the effects of foreign capital inflows may differ from country to country depending on the manner in which the capital is utilized. For a particular country, therefore, actual effects can best be determined empirically.

In Kenya, foreign capital inflows have occupied an important role in the growth process. They have been particularly important in financing capital formation and the balance of payments. The table below gives an indication of this important role. As can be verified from Table I, over 30% of the total capital formation was financed by foreign capital inflows for the whole period excluding the year 1971. For the same period foreign capital inflows financed 60% or more of the Current Account deficit.

Table I

TOTAL LONGTERM CAPITAL INFLOWS* (NET) 1971-1980
(VARIOUS PERCENTAGE MEASURES)

Year	As a Percentage of Total Capital Formation	As a Percentage of the Current Account Deficit
1971	17	58
1972	30	116
1973	35	102
1974	44	66
1975	36	75
1976	39	160
1977	31	755
1978	41	70
1979	44	101
1980	37	63

Source: Kenya: Economic Survey , Government Printer, Nairobi, 1974, 1982 and 1983.

* In this table, longterm capital inflows are defined to include capital grants to the government.

For some of the years, foreign capital inflows have more than financed the deficit especially during the coffee boom period of 1976 - 1977. Besides this foreign capital inflows have been an important channel through

which the country acquires foreign technology, expertise and management know-how.[1] Foreign Capital inflows have thus been crucial in determining investment, balance of payments, employment and therefore growth in the country. This important role of foreign capital inflows has also been pointed out in our development plans. As Hazlewood[2] notes, the inflow of foreign capital was expected to finance two thirds of central government investment, 40% of private investment and one half of investment in total and also to provide a substantial margin over the forecast balance of payments deficit during the first plan period (1966-1970). This important role of foreign capital inflows has also been stressed in subsequent plans.[3]

Given this central position of foreign capital inflows, it is important to study how they have influenced economic growth in the country. Studies in Kenya have however been focussed on particular types of foreign capital inflows such as direct investment or Multinational Corporations.[4] The basic approach has been the use of case studies to demonstrate how these capital inflows have influenced growth and development in the country. While these studies are important in their own right, it is equally important to study the problem at the macro-level. This can be done by taking all types of foreign capital inflows and examining how they affect the various macrovariables. The

results can then be compared with the "micro" studies and also with studies from other countries. The present study in this paper aims at filling this gap.

For a successful study of this nature, one requires vast amounts of data. However, in an attempt to study the impact of foreign capital inflows in Kenya, one immediately lands in almost insurmountable data problems. The dimensions of the data problems include data availability; their accuracy, reliability and aggregation; and even information on where they can be obtained. The tables below show one aspect of this problem.

Table IIa : EQUITY AND LOAN CAPITAL FLOWS (NET) K£M

1974	11.0
1975	16.2
1976	38.9
1977	22.4
1978	39.6
1979	39.9

Source: Central Bureau of Statistics,
Investment Surveys, (Unpublished).

Table IIb : EQUITY AND LOAN CAPITAL FLOWS £M

YEAR	RECEIPTS	REPAYMENTS	NET
1974	9.3	10.2	- 0.9
1975	11.4	14.8	- 3.4
1976	17.6	24.3	- 6.7
1977	14.6	28.6	-14.0
1978	9.6	20.9	-11.3
1979	9.8	26.9	-17.1

Source: Central Bank of Kenya, Foreign Exchange Notice No.21. (Unpublished).

Table IIc : EQUITY AND LOAN CAPITAL FLOWS K£M

YEAR	RECEIPTS	REPAYMENTS	NET
1974	8.2	4.0	4.2
1975	17.6	9.8	7.8
1976	15.7	30.1	-14.4
1977	13.0	22.9	- 9.9
1978	14.4	10.8	3.6
1979	8.9	30.9	-22.0

Source: Central Bank of Kenya, Investments Office (Unpublished).

Data for identical items of the Capital Account of the balance of payments were obtained from three different sources as shown above and then compared. A priori, the figures should be the same or insignificantly different since the items are identical. However, the tables do not support this. From Table IIa, all the net figures are positive while all are negative in Table IIb. From Table IIc half of them are positive and the rest are negative. Each of these tables portrays a completely different picture yet they are supposed to be saying the same thing. Such discrepancies suggest that the overall Capital Account data are faulty and cannot therefore be used for empirical analysis without first establishing the causes of these differences. We are therefore faced with a second problem of exploring all the data sources and examining their limitations.

In summary, therefore, this research paper has two main objectives. Firstly, we undertake to identify all the sources from which we can obtain data on the Capital Account of our balance of payments. The major limitations of each data source will be investigated to enable us to select the best available information from the different sources. This will also help in explaining the discrepancies in the data. Secondly, using the best available data, we shall attempt to analyse the effects

of foreign capital inflows in the Kenyan economy at the macro-level.

1.2 Organization of The Paper

This research paper is composed of six chapters. Chapter Two is a review of both the theoretical and empirical literature on the role of foreign capital inflows in promoting growth in the recipient economies. In the literature, the impact of foreign capital inflows is examined on a wide range of macrovariables related to growth such as savings, investment, money, foreign trade and the rate of growth of output. In Chapter Three, we present the hypotheses and methodology. A multiple linear regression model is presented for testing the hypotheses. These hypotheses are tested using Kenyan data in Chapter Five. Chapter Four has two major parts. In part one, we identify all the sources of Capital Account data for Kenya. For each of the sources the nature of the data is examined. The second part deals with the data limitations from each of the sources. These limitations are used as the criteria for selecting the data to be used in the empirical analysis. Chapter Five provides the analysis and results. Finally, in Chapter Six we give the conclusions drawn from the study.

FOOTNOTES

1. See Hazlewood, A.: The Economy of Kenya: The Kenyatta Era, Oxford University Press, New York, 1979, Ch.7.

2. Ibid : P.169.

3. See Kenya: Development Plan , Government Printer, Nairobi, 1974-78, p.284; 1979-83, p.30 and 1984-88, pp.103-110.

4. See the relevant section of the literature survey in Chapter Two of this paper.

CHAPTER TWO

LITERATURE SURVEY

The inflow of foreign capital to developing countries has often been regarded as an engine of economic growth.[1] The theoretical models originally developed to show the relationship between capital inflows and economic growth are similar in that they treat the role of foreign capital solely as providing finance for investment (in both the public and private sectors) thereby leading to an increased rate of growth in an economy. Among these is the two gap model developed by Chenery and Strout[2] which provides a theoretical framework within which the role of foreign capital inflows can be seen. According to their analysis, developing countries face two major growth constraints. Firstly they have inadequate savings to finance their desired levels of investment. They also lack enough foreign exchange to purchase all the necessary imports required for the growth of their economies. These are the well known savings and foreign exchange gaps.

This formulation has however been criticised because of its underlying weaknesses. Among these are the assumption of constant coefficients such as the incremental capital output ratios and imports coefficients. It is also assumed that the two gaps operate independently of each other. These assumptions restrict the usefulness of the

model.[3] This family of models has also been questioned because of some other assumptions which are implicit in their formulation. The main one is that all capital inflows are used to finance investment. This is however rejected because of the possibility of a leakage to consumption. Similarly there is the argument that capital inflows may lead to a decline in domestic savings and thus lead to reduced net benefits from foreign capital. Finally these models exclude some macrovariables which are considered to be important in the modelling of foreign capital inflows. These include money, credit, interest rates and foreign trade changes associated with foreign capital inflows. These limitations in traditional modelling of the role of foreign capital inflows are summarized in an article by Areskoug.[4]

Early attempts to include some of the omitted variables can be found in Polak's[5] work where he has allowed for both monetary and foreign trade effects. The model does not however allow for variable coefficients which it assumes to be constant.[6] In a bid to overcome these underlying weaknesses in traditional models, new ideas and improvements have been incorporated in the analysis of the role of capital inflows in economic growth. These ideas basically question the validity of the assumptions found in the earlier models and also help in

providing improvements in the understanding of the effects of foreign capital inflows on economic growth. The empirical work pertaining to this exercise is surveyed here.

Most writers mean different things when they talk about foreign capital inflows. Some restrict themselves to the autonomous flows in the Capital Account of the balance of payments. Others talk of all types of foreign capital inflows as measured by the deficit in the Current Account. This specification of the capital inflows poses various problems when one attempts to analyse their effects on the economy.[7] In the foregoing survey the particular type of inflow will be stated as the authors do. However, foreign capital inflows will be used to mean all types of inflows (including aid) unless otherwise stated.

Much of the empirical work on the effects of foreign capital inflows on an economy has been focused on their effects on investment, savings and overall economic growth. The statistical tests carried out relate capital inflows to growth directly or indirectly via savings and investment. This includes works by people like Griffin and Enos; Rahman; Papanek and Areskoug whose work is

reviewed below in this chapter. Very few authors have addressed themselves to the monetary and foreign trade effects associated with capital inflows. The relatinship between domestic savings and capital inflows has been reviewed in an article by Raymond and James.[8] Here, we present a summary of their main findings.

Rahman[9] has argued that an increase in foreign funds causes the relaxation of government efforts to save and therefore a reduction of the average national saving rate. Using data from Chenery and Strout to test his hypothesis, he regressed the average propensity to save (APS) for 31 less developed countries against the ratio of net capital imports (F) to gross national product (Y). He used the following equation:

$$\frac{S}{Y} = a_0 + a_1\frac{F}{Y}$$

where S = Savings, Y = gross national product, and F = foreign capital inflow defined as the deficit in the Current Account of the balance of payments (M-X). He obtained a value of a_1 of -0.25 with a t value of 2.6. From this he concluded that foreign capital inflows reduce domestic savings. This was however questioned by Gupta[10] who refuted the selection of the 31 countries

instead of using data from all the countries available (50 of them). Gupta also divided the countries into three groups according to their per capita income. He found no significant relationship between capital inflows and domestic savings. It was only in the middle income group where he obtained results similar to those of Rahman.

Other research was carried out by Landau[11] using data for 18 Latin American Countries. The regression equation he used was

$$S = b_0 + b_1 Y + b_2 F$$

where S = domestic savings, Y = gross national income, and F = net capital inflows. He found that in 16 out of the 18 countries the coefficient of F was significantly negative ranging from -0.2 to -0.9. The positive coefficients were not significantly different from zero. He further used pooled data for the 18 countries and a modified formulation of the following form

$$S/Y_g = d_0 + d_1 \log(Y_g/N) + d_2(F/Y_g)$$

where Y_g is gross national income, N is population and S and F are as before. The coefficient of F/Y_g was still

negative indicating an inverse relationship between capital inflows and savings. Singh[12] obtained similar results when he found that F/Y_g and F/S were negatively correlated with the average propensity to save (S/Y).

To the extent that foreign capital inflows reduce domestic savings, the level of investment is reduced and this may also reduce the rate of economic growth. This argument led to the hypothesis of a negative correlation between foreign capital inflows and economic growth. This relationship was tested statistically by Griffin and Enos in 1970.[13] Their assertion was that foreign assistance is not associated with development and sometimes it may even deter it.

They collected data for 15 African and Asian countries for the period 1962-64 to test the following relationship: $\dot{Y} = \alpha_0 + \alpha_1 A/Y$ where $\dot{Y}$ = the average rate of growth of gross national product (GNP) and A/Y = the ratio of foreign aid to GNP. They did not however clarify whether they were using real or monetary GNP. The results obtained showed a low correlation coefficient (r^2) of 0.33 with the regression coefficient α_1 having a very large standard error. Though the regression coefficient had the right sign (positive) it was not significantly different from zero at the 5% level. For Latin America

alone they obtained a negative coefficient. The same statistical technique was applied to a single country (Turkey) over a long period (1951-65) and the results were similar. The correlation coefficient was higher (0.62) and the coefficient of the lagged values of A was negative but statistically insignificant.

Similarly a cross section study of 32 improvident countries revealed an inverse relationship between foreign aid and savings. From this they concluded that: "foreign savings often tend to supplant rather than supplement (let alone increase) domestic savings".[14] In support of their findings they argued that both the government and the private sectors tend to expand consumption if resources are forthcoming from abroad. The writers however doubt the plausibility of such an inverse relationship. These doubts are strengthened by a similar study from the same region which came up with evidence contradictory to that of Griffin and Enos. The study was conducted by Massell, Pearson and Fitch[15] on the relationship between foreign exchange availability and economic development. Multiple regression analysis was used where three types of foreign exchange sources (including their lagged values) were taken as independent variables. Their impact on development was examined using three indicators of development as the dependent

variables in the following model.

$$\Delta M_{it} = a_0 + a_1 \Delta X_{it} + a_2 \Delta X_{it-1} + a_3 \Delta G_{it} + a_4 \Delta G_{it-1} + a_5 \Delta P_{it} + a_6 \Delta P_{it-1}$$

$$\Delta I_{it} = b_0 + b_1 \Delta X_{it} + b_2 \Delta X_{it-1} + b_3 \Delta G_{it} + b_4 \Delta G_{it-1} + b_5 \Delta P_{it} + b_6 \Delta P_{it-1}$$

$$\Delta Y_{it} = c_0 + c_1 \Delta X_{it} + c_2 \Delta X_{it-1} + c_3 \Delta G_{it} + c_4 \Delta G_{it-1} + c_5 \Delta P_{it} + c_6 \Delta P_{it-1}$$

where:

M = imports of goods and services; I = Investment (Annual gross fixed capital formation); Y = gross national product; X = exports of goods and services; G = government net capital inflow from abroad (including transfers); P = net private capital inflows (including transfers); i denotes country, t the year and Δ denotes changes.

The results for imports showed that all the coefficients were statistically significant except lagged government capital inflow (a_4). For investment none of the coefficients none of the coefficients was significant except the two coefficients of private capital inflow (b_5 and b_6). In terms of contribution to output, private capital inflows had very little and insignificant effect. Nevertheless, these results show a positive relationship between capital inflows and changes in gross national product.

The above findings were further supported by Voivodas[16] in his study using Korean data for the period 1962-68. Regressing the ratio of savings to total output (S/Y) on the ratio of capital inflow to total output (F/Y) he obtained a highly significant coefficient of 1.32 with a t value of 3.49. Similar results were obtained for the regression of the ratio of Investment to total output on the ratio of private capital inflow to total output. Official capital inflows also had a positive sign though the coefficient was statistically insignificant. On the rate of economic growth the coefficient of total capital inflow had the right sign (positive) and was statistically significant though r^2 was low. Foreign capital inflows therefore seemed to have been beneficial to the Korean economy in the 1960's.

Another major contribution was by Areskoug[17] whose work was a challenge to the orthodox belief on the role of foreign capital inflows on growth. His focus was on the effects of external public borrowing on foreign trade, domestic expenditure (investment and consumption) and on foreign assets. The data used was drawn from 22 countries in Latin America, Middle East, Southern Europe and the Far East.

The foreign trade effects were estimated through two regression equations one having imports and the other exports as the dependent variables. The following regressions were run:

$$M = a_M + b_M B + c_M Y + d_M(F)$$

$$X = a_X + b_X B + c_X Y + d_X(F)$$

where M = imports of goods and services; X = exports of goods and services; B = net government external borrowing; Y = gross national product and F = other net capital inflows. The coefficients of borrowing (B) on imports were all positive but in a majority of cases they were less than unity. The coefficients of borrowing on exports were mostly negative and lay between zero and negative one. He concluded that import effects were predominant although the export effects were not negligible. The consumption and investment effects were examined through the following equations:

$$I = a_I + b_I B + c_I Y + d_I F$$

$$C = a_C + b_C B + c_C Y + d_C F$$

where the variables are defined as before. The effects on consumption and investment were found to be mainly positive. He reached the conclusion that:

> "There is in other words strong evidence that borrowing has been used for an intertemporal reallocation of consumption as well as for growth inducement via investment"[18]

He also argued theoretically that the algebraic sum of both the consumption and investment effects are equal to the amount of borrowing and hence the increment trade deficit.[19] He therefore tested the hypothesis of a matching incremental trade deficit saying that an increase in borrowing would widen the trade deficit by the same amount. Trade deficit was defined as the balance on the total goods and services account except for investment income. A similar regression was run using the trade deficit as the dependent variable and the coefficient of borrowing on the deficit was not significantly different from unity. This tended to support his hypothesis of a matching incremental trade deficit. The results of the effects of borrowing on foreign assets were found to be inconclusive. The estimated coefficients of borrowing did not show a coherent pattern; their standard errors were high and the

Durbin-Watson statistics indicated the presence of autocorrelation.'

In a more recent article, Areskoug[20] studied the relationship between foreign capital utilization and the economic policy responses of developing countries. The core of his argument was that the economic policies of most governments are influenced by the varying supply of foreign capital because they are major aid receivers. If we can identify the nature of the influence we can then know how these foreign resources are utilized. He took annual data for 20 countries for the period 1964-68. The main policy tools at the disposal of these governments were the exchange rate; trade and exchange controls (both expenditure switching policies) the bank credit and government expenditure (both expenditure increasing policies). He found that expenditure switching policies were associated with a higher average investment response than expenditure increasing policies which were more related to consumption. He had no evidence to show any associated monetary changes. In his concluding remarks he said:

> "Tests on 20 countries bear out the hypothesis that broad policy shifts occur. Together with the accompanying monetary changes, these shifts help to explain why the traditional assumption of a marginal one to one relation between investment and capital inflow had to be false"[21]

In yet another more recent study, the same author tested the effects of foreign direct investment on aggregate savings and investment in developing countries.[22] His major departure from his previous studies was to isolate foreign direct investment and examine its effects on the macrovariables mentioned above. His methodology is similar to the previous ones except that he uses total net capital inflow into the non-financial private sector as a separate independent variable. He collected data for the period 1948-68 from 22 developing countries. The results of the regression depicted a wide variation in the coefficient of private direct foreign investment for many of the countries. According to his analysis the conclusions to be drawn depended on the size of the coefficient. He argued that if the coefficient is greater than one foreign direct investment stimulates domestic investment; if between zero and one it partially supplements and partially displaces it; and finally if less than zero, it more than displaces domestic investment. His empirical findings revealed that private foreign investment contribution to capital formation in developing countries is partially supplementary and partially a substitute.

In most of the recent studies, more detailed research has been carried out which has helped in clarifying the results of the previous studies and also in understanding

further the manner in which the effects of foreign capital are manifested in an economy. One such study was conducted in 1975 by Dacy[23]. He warned that we need more information than what we have from previous studies if we are going to understand the effects of foreign capital inflows fully. According to him, the effects of foreign capital inflows on savings and the resulting implications on growth can be known if we can ascertain whether the observed statistical relationships between foreign and domestic savings ratios are reversible. He argues that previous studies have erred by assuming that the relationship is reversible. Beginning from the premise that aid has a negative effect on domestic savings, he goes on to consider what would happen if the aid was withdrawn for some reason. If domestic savings recovered, there would be virtually no effect; but if they did not then the effect of aid would be to reduce long term growth rate. As he goes on to say this implicit assumption about reversability is a major cause of the needless argument about the effects of aid on growth. Using a simple dynamic model, he showed that aid can lead to a lower long term growth rate than if there was no aid. The main assumptions of his model are that the government will use some of the aid to replace government savings thereby freeing some resources for consumption programmes and that these programmes cannot be cut back after implementation even if

aid is cut-off. Simulation runs showed that in comparison to the no aid pattern of growth, post aid patterns of growth can be higher or lower depending on the initial poverty of the country as depicted by its savings ratio, the additional use in consumption as a percentage of aid received and finally the terms of aid.

A similar argument to Dacy's is found in an article by Bhagwati and Grinols.[24] In this article they have argued that foreign capital inflow creates dependence and this may make it difficult for the recipient country to make a successful transition to Socialism. As the argument goes, if a country which has sustained high levels of investment and consumption because of foreign capital decides to have an ideological tilt to Socialism, foreign investors will shy away, foreign aid will be cut-off and pressure will be brought to bear upon international agencies to withhold aid and loans. The result is a resource crunch for the aid receiving country. This means that past levels of consumption and investment cannot be sustained; economic sabotage by the domestic investors may reduce the productivity of investment; and finally if aid had led to economic structural change leading to over-dependence on imported inputs, the decline in foreign exchange receipts might seriously affect productivity.

Under such circumstances the authors predict growth in discontent with the new socialist regime and a possible military take-over. Using the Harrod-Domar type of a model, they undertook simulation runs under two different situations; one where aid was forthcoming and the other where it had been cut off due to 'economic blackmail from the West'. Comparing the two situations the results tended to support their basic argument of adverse effects of foreign aid on the economy. They suggested that this is what could have happened to Ghana and Chile during the days of Nkrumah and Allende respectively.

Another contribution was made by Stoneman[25] whose aim was to find out the effects on development of a range of variables concerned with domestic savings and foreign capital inflows. His major departure from previous other studies is that he differentiated between the direct effects of foreign capital inflows on the balance of payments and the structural effects they had on the economy. He used accummulated gross inflows of capital (a stock concept) to measure the structural effects and for the balance of payments effects he used net capital inflows (net of both amotization and factor payments). These were incorporated in the following equation:

$$X_1 = C+b_2X_2+b_3X_3+b_4X_4+b_5X_5$$

where X_1 = annual growth rate in GDP;
X_2 = gross domestic investment (savings);
X_3 = inflow on direct investment;
X_4 = net inflow on aid and other foreign long term flows, and X_5 = stock of foreign direct investment. All the variables were expressed as proportions of GDP except X_1. A basic sample of 188 observations was taken from Countries in Latin America, Asia, Africa and Mediterranean countries. The results for domestic investment showed a highly significant coefficient in almost every case even for the separate geographical regions. The coefficient for net direct foreign investment was positive but less than one for all the regions except in Asia. However, it was not statistically significant. On the relationship between growth and the stock of foreign direct investment, there was a clear and significant correlation between them. This result was however, weakened by lack of statistical significance for any of the geographical regions. Nevertheless, the results suggested that direct investment is associated with structural effects that retard growth.

Stoneman's work shares some similarity with the work done by Van Loo.[26] Her main objective was to explore the

impact of foreign direct investment on domestic investment in Canada. Like Stoneman, she observed that foreign capital inflows can have two effects on the economy of the capital receiving country. One of these effects is direct and the other is indirect. Her major hypothesis was that an increase in foreign direct investment inflow raises total investment by the amount of the inflow (the direct effect). This was tested using the following equation:

$$I_t = a_0 + a_1 Y_t - a_2 U_t + a_3 FDI_t + \varepsilon_1 \quad \text{where}$$

Y_t = gross national expenditure; $U_t = YF_t - Y_t$;

YF_t = full capacity output; I_t = business gross fixed capital formation; FDI = foreign direct investment. She noted that the equation adopts one of the versions of the accelerator theory of investment, U being the accelerator variable. To test for the indirect effect a simultaneous equation model was developed which also helped to remove any possible simultaneous equation bias. The model was formulated as below:

$$I_t = a_0 + a_1 Y_t - a_2 U_t + a_3 FDI_t + \varepsilon_1$$

$$C_t = b_0 + b_1 Y_t + b_2 C_{t-1} + b_3 FDI_t + \varepsilon_2$$

$$E_t = C_0 + C_1 YUS_t - C_2 WPR_t + C_3 FDI_t + \varepsilon_3$$

$$M_t = d_0 + d_1 Y_{t-1} + d_2 FDI_t + \varepsilon_4$$

$$Y_t = C_t + I_t + G_t + E_t - M_t$$

$$U_t = YF_t - Y_t$$

where C = personal expenditure on consumer goods and services; E = exports of goods and services; YUS = United States gross national expenditure; WPR = Canadian Wholesale Price index divided by the US Wholesale Price index and Corrected for the foreign exchange rate; M = imports of goods and services; YF = full capacity output; ε = the stochastic term and t = a time subscript.

The single equation model had the correct sign (positive) on the coefficient of FDI and it was statistically significant. Moreover, this coefficient was not significantly different from the one in the simultaneous equation model. The coefficients of FDI on exports and consumption were negative and the one for imports was positive. None of them was statistically significant except the one on exports. The combined total effect however, had an impact multiplier of less than one. Van Loo claimed that her approach helps to clarify the nature of the debate between Papanek and

Griffin.[28] Griffin argument was that foreign investment is in most cases split between domestic investment and consumption while Papanek argued that foreign investment can produce an increase in investment beyond the size of the foreign investment increase. Using Van Loo's analysis, Griffins results are supported when we consider the combined total effects while Papanek's results are compatible with the direct effects only. Their differences could therefore be attributable to their failure to distinguish between the two effects.

The dependence on external capital for growth could have long rum implications which are undesirable for the recipient country. This was shown for the case of Puerto Rico by Wasow.[29] His argument shares some similarity with that of Bhagwati and Grinols. He constructed a model for the period 1950-70 based on two assumptions that capital inflows affect savings and the alternative assumption that savings are not affected at all. In the empirical analysis for both cases, the models indicate very high levels of foreign ownership due to dependence on external finance. The foreign ownership is 90% for the case where savings are unaffected by foreign capital. In the case where savings are affected, the resultant external debt eventually exceeds the capital stock and the flow of net borrowing is greater than the

level of investment. There are substantial amounts of capital inflows for both cases (40% of GDP for the lower case). Although both models reveal an accelerated growth rate from capital inflows, it is low for the case where savings are affected by capital inflows. This experience has left Puerto Rico more dependent and virtually unable to maintain sustained growth without capital inflows. This relationship of capital inflows and growth was also stressed in a recent study by Wai and Wong.[30] Their research was focused on the identification of the prime determinants of private investment in developing countries. Using governemnt investment, changes in bank credit to the private sector and private capital inflows as the independent variables, they estimated their effects on private investment (the dependent variable) in a multiple regression equation model. The empirical results for the five countries taken indicated that the three variables were important determinants of private investment.

Although much of the empirical research and also the debate on the impact of foreign capital inflows has been focused on the developing countries, virtually nothing has been done for Kenya. The little work done is concentrated on one type of capital inflow. This is foreign direct investment whose main agents are the

Multinational Corporations. Various aspects of direct investment in detail including effects on employment, balance of payments, linkages, and their implications to to the overall growth of the economy are examined.[31] The findings of these studies suggest that foreign direct investment has adverse negative effects on the Kenyan economy.

In another study, a World Bank Mission[32] to Kenya in 1975 tried to test the hypothesis of an inverse relationship between foreign capital inflows and domestic savings. They used the formulation by Rahman, Enos and Griffin to test the following relationship:

$$\frac{S}{Y} = a_0 + a_1 \frac{F}{Y}$$

where S = gross national savings; Y = gross national income and F = Capital inflows measured by the resource gap (M-X), all figures in constant prices. They obtained the following result:

$$\frac{S}{Y} = \underset{(15.2)}{0.1707} - \underset{(-.57)}{0.1852}\frac{F}{Y}$$

$\bar{R}^2$ = -0.11, D.W.= 1.2, S.E.E = 0.026. The figures in brackets are t statistics. In a different formulation,

they obtained the following result:

$$S = -230.5 + 0.36Y - 0.77F$$
$$\quad\quad (-0.37) \quad (7.1) \quad (-3.08)$$

$$\bar{R}^2 = 0.89, \quad D.W. = 0.89, \quad S.E.E. = 20.$$

The coefficient of F was still negative but this time it was statistically significant. Using long term capital inflows and income as the explanatory variables, the result was again negative but statistically insignificant. In a more disaggregated analysis they proceeded further to examine the hypothesis of negative correlation between F and S. They argued that in most cases foreign capital inflows are not used to finance the imports of non-capital goods directly. From this they concluded that due to the fungibility of foreign exchange the availability of foreign capital either increases imports of consumer goods, raw materials, or reduces exports. This hypothesis was tested using exports, imports of raw materials and consumer goods as the dependent variables and with gross domestic product, and foreign capital inflows as independent variables. None of the coefficients of foreign capital inflows was statistically significant. They were however all positive except the coefficient of capital inflows on exports. The Mission therefore

concluded that these equations could not prove the alleged relationship between savings and foreign capital inflows. Moreover the Mission was sceptical about the approach followed arguing that expost aggregate savings cannot be regressed on the trade balance if the objective is to measure the impact of foreign capital inflows on savings. This is mainly as a result of some statistical and conceptual problems associated with the specification of capital inflows.[33]

In concluding this review, we note that the orthodox view about the role of foreign capital inflows in promoting economic growth has been strongly questioned. The growing body of literature on this subject holds the view that not all foreign capital inflows are chanelled to investment. There has however, been conflicting results from empirical analyses. These have been attributed to conceptual problems with the statistics and wrong specifications of models which reduce the reliability of the results obtained. The improvements in recent studies however help in removing some of these problems and therefore enables a clearer understanding of the role of foreign capital in economic growth. Their general finding is that although foreign capital inflows have a positive impact on economic growth, the contribution

is not as important as originally argued. The conflicting findings have also been observed for different countries. This suggests that different countries may utilize foreign capital differently depending on other political and socio-economic factors of each country. If this was the case the conflicting results should not be blamed on wrong data and methodology only. Pooling data from different countries together would also yield unsatisfactory results if the utilization of capital is different in each country. It is therefore necessary to analyse each country separately.

FOOTNOTES

1. This view is held by most of the early writers on economic growth and development in less developed countries. See for example Islam, N. : Foreign Capital and Economic Development: Japan, India and Canada, Tokyo, Charles E. Turtle, 1960; Guth, W.: Capital Exports to Less Developed Countries, Holland, D. Reidel, 1963.

2. The basic model can be found in Chenery, H.B. and Bruno, M.: "Development Alternatives in an open Economy: the Case of Israel", Economic Journal, March, 1962. Further development of the model can be found in Chenery,H.B. and Strout, A.M.: "Foreign Assistance and Economic Development" American Economic Review, Vol.56, September 1966.

3. For a critique of this model, see Maizels, A.:Exports and Economic Growth of Developing Countries, London, Cambridge University Press, 1968; and Nyambati, S.M.: "The Impact of Trade Instability on Economic Growth in Kenya." M.A. Thesis, University of Nairobi, 1980 (unpublished); and Wasow, B. "Dependent Growth in Capital-Importing Economy: The Case of Puerto Rico." Oxford Economic Papers, 30(1), March 1978, pp.117-129.

4. Areskoug, K.: "Foreign Capital Utilization and Economic Policies in Developing Countries", Review of Economics and Statistics, 55(2) May 1973, pp.182-189.

5. Polak, J.J. et. al: "Monetary Analysis of Income and Imports and its Statistical Application", IMF Staff Papers, 7, April, 1960, pp.349-415.

6. Some weaknesses of the Polak Model can be found in, Furness, E.L.: Money and Credit in Developing Africa, Waitstable Litho, Waistable, Kent, 1975, pp.206-214.

7. The problems related to the specification of capital inflows haye been noted by Stoneman, C.: "Foreign Capital and Economic Growth", World Development, 3(1) January 1975, pp.11-26.

8. Raymond, F.M. and James, E.Z.: "The Nature of the Savings Function in Developing Countries. A Survey of the Theoretical and Empirical Literature", The Journal of Economic Literature, March, 1973, pp.1-27.

9. Rahman, M.A.: "Foreign Capital and Domestic Savings: A test of Haavelmo's Hypothesis with Cross-Country Data", Review of Economics and Statistics, 50, February 1968. This Haavelmo's Hypothesis is quoted in Raymond, F.M. and James, E.Z.: op.cit. pp.12-26.

10. Gupta, K.L.: "Foreign Capital and Domestic Savings: A test of Haavelmo's Hypothesis with cross-sectional Data: A comment", Review of Economics and Statistics, 52, 1970, pp.214-216.

11. Landau, L.: "Differences in Savings Ratios Among Latin American Countries", Ph.D. Dissertation, Department of Economics, Harvard University, 1969. Quoted in Raymond F.M. and James, E.Z.: op.cit. pp.12-26.

12. Singh, S.:"The Determinants of Aggregate Savings" Domestic Finance Division, International Bank for Reconstruction and Development, April, 1971. (Mimeographed). Also in Raymond, F.M. and James, E.Z.: op.cit. pp.12-26.

13. Griffin, K.B. and Enos, J.L.: "Foreign Assistance: Objectives and Consequences", Economic Development and Cultural Change, 18(3), April, 1970,pp.313-327.

14. Ibid. pp.320.

15. Massell, B.F. et.al.: "Foreign Exchange and Economic Development: An Empirical Analysis of Selected Latin American Countries", Review of Economics and Statistics, 54, 1972, pp.208-212.

16. Voivodas, C.: "Exports, Foreign Capital Inflow, and South Korean Growth", Economic Development and Cultural Change, 22, April, 1974, pp.480-484.

17. Areskoug, K.: External Public Bowowing: It's Role in Economic Development, Praeger Publishers, New York, 1969.

18. Ibid. p.78.

19. Ibid. pp.47-48.

20. _____ "Foreign Capital Utilization and Economic Policies in Developing Countries", Review of Economics and Statistics, 55, May, 1973, pp.182-189

21. Ibid. p.188.

22. _____ "Private Foreign Investment and Capital Formation in Developing Countries", Economic Development and Cultural Change 24(3) April 1976, pp.539-547.

23. Dacy, D.C.: "Foreign Aid, Government Consumption, Savings and Growth in Less Developed Countries", Economic Journal 85. September, 1975, pp.548-561.

24. Bhagwati, J.N. and Grinols, E.: "Foreign Capital Dependence, Destabilization and Feasibility of Transition to Socialism", Journal of Development Economics, 2. 1975, pp.85-98.

25. Stoneman, C.: op.cit.

26. Frances Van Loo : "The Effect of Foreign Direct Investment on Investment in Canada", Review of Economics and Statistics, 59, November, 1977, pp.474-481.

27. The results of the reduced form of the Investment equations from the structural model gave an impact multiplier of .54 using a bayesian approach and .99 using standard statistical methods. This dampening effect on total investment is due to the impact of FDI on exports, imports, and consumption operating through the accelerator.

28. Griffin argues that part of foreign investment goes to consumption and thus the increase in investment from foreign capital is less than the inflow itself. Papanek on the other hand argues that the increase in investment is more than the inflow itself. Griffin, K. "Foreign Capital Domestic Savings and Economic Development", Bulletin, Oxford University, Institute of Economics and Statistics, 32, May 1970, and Papenek, G.F.: "The Effect of Aid and other Resource Transfers on Savings and Growth in Less Developed Countries", Economic Journal, 82, September 1972.

29. Wasow, B.: "Dependent Growth in a Capital-Importing Economy: The Case of Puerto Rico", Oxford Economic Papers, 30(1) March 1978, pp.117-129.

30. Wai, U.T. and Wong, C.: "Determinants of Private Investment in Developing Countries", The Journal of Development Studies, 19(1) October 1982.

31. A comprehensive study on the effects of Multinational Corporations in the Kenyan Economy is in Langdon, S.: Multinational Corporations in the Political Economy of Kenya, MacMillan, London , 1981. Also see Kaplinsky, R.: Readings in the Multinational Corporation in Kenya, Oxford University Press, Nairobi, 1978.

32. World Bank: Kenya: Into the Second Decade, John Hopkins University Press, Baltimore and London, 1975.

33. For their critical views, see Ibid. pp.368-371.

CHAPTER THREE

HYPOTHESES AND METHODOLOGY

3.1 Introduction

The literature survey in Chapter Two provides the theoretical model and the empirical findings on the impact of foreign capital inflows on the economies of the capital receiving countries. In this chapter, we present the hypotheses to be tested using the available Kenyan data and the methodology. These are presented in the sections which follow. The analysis and the results of the findings are presented in Chapter Five. It is from these results that we shall draw conclusions about the effects of foreign capital inflows in Kenya.

3.2 The Hypotheses

A total of four hypotheses are stated relating foreign capital inflows to a number of macrovariables in Kenya. These are investment, foreign trade, money supply and overall rates of economic growth. Several disaggregations can be made on foreign capital inflows such as long and short term capital inflows; public and private capital, suppliers' credits and cash loans, and

direct investment and other private capital. These distinctions are necessary because the disaggregated components may differ in their impact on the economy. For instance suppliers' credits may affect investment differently from cash loans; long term and short term capital inflows may each have a different effect on economic growth. Also private and public capital inflows may differ in their effects on any of the above macrovariables. All these disaggregations are therefore useful when analysing the impact of foreign capital inflows on the economy. However, the disaggregation of the data used in this paper is limited by the availability of a data series long enough to enable statistical analysis. This problem of the data limitations is explained in Chapter Four. Nevertheless, from the data available, we can distinguish between long and short term capital and also between private and public capital inflows. We shall therefore use the distinction between private and capital inflows in our analysis.

3.2.1 Hypothesis One:

> Both private and public foreign capital inflows increase total investment in Kenya by exactly the amount of the capital inflows.

In this hypothesis we test the orthodox view that all foreign capital inflows are used solely to finance investment against the alternative that they are not. This is the view assumed in two gap models that a unit increase in foreign capital inflows increases total investment in the capital receiving country by one unit. There are several reasons why this may not be the case. Firstly, not all foreign capital inflows may be chanelled to investment; some of it may be used to finance consumption. Also foreign capital inflows may stimulate or contract domestic investment. Stimulatory effects may occur through backwards or forwards linkages while contractionary effects may occur if foreign capital leads to a relaxation of domestic savings or if they discourage local entrepreneurship. In this hypothesis, therefore, we shall be interested in the size of the coefficients. If they are significantly different from one we shall reject the null hypothesis.

3.2.2 Hypothesis Two:

> Both private and public foreign capital inflows are associated with a foreign trade structure that is unfavourable to Kenya's balance of payments.

Foreign capital inflows are expected to give rise to changes in exports and imports. Firstly foreign capital inflows provide the foreign exchange required to purchase imports of capital goods. These capital goods can be invested in projects producing goods for export or import substitutes. In this way the projects can earn or save foreign exchange for the country which may reduce the future need for increased foreign capital inflows. The investments from foreign capital inflows may reduce both imports and exports if goods previously imported are locally produced and also if goods previously exported are chanelled to domestic use. They can also lead to increased exports if they are invested export producing projects. On the other hand, additional imports would arise if the projects receiving both private and public foreign capital inflows are highly dependent on imported inputs. These additional imports can also arise from the increase in income resulting from the inflows of both types of capital. This will happen because the marginal propensity to import for the capital receiving countries is positive and expected to be large. Also additional imports are likely as a result of foreign investors insisting on the use of imported inputs to meet certain specified standards and also because of tied aid from foreign donors. The resulting change in imports would be more than the increase in foreign capital inflows implying that more foreign

exchange is required to pay for the additional imports. Under such circumstances foreign capital inflows which are expected to ease pressure on the demand for foreign exchange (by either earning or saving more) instead create more demand. If this increased demand for foreign exchange cannot be met by increased export earnings, more foreign capital inflows would be required. In such cases foreign capital inflows become a crucial source of foreign exchange. A trade structure therefore results whereby foreign capital inflows increase imports by more than they increase exports. Such a trade structure is unfavourable to the capital receiving country and is difficult to maintain with the economy becoming more dependent on inflows of capital from abroad and in the limit even borrowing to service international debts. This hypothesis will be tested under three subhypotheses which are stated as follows:

(a) There is a positive relationship between both private and public foreign capital inflows and imports.

(b) There is a positive relationship between both private and public foreign capital inflows and exports.

(c) The coefficients of both private and public foreign capital inflows on imports are greater than those on exports.

3.2.3 Hypothesis Three:

Both private and public foreign capital inflows have an expansionary effect on the money supply in Kenya.

Foreign capital inflows may or may not contribute to the increase in money supply in a country. Whenever a country receives foreign capital, the economy has to adjust to a higher level of available foreign resources. In the processes of adjustment, the increase in money supply would depend on whether the foreign capital is immediately converted into imports of goods and services as reflected in the Current Account or whether it goes to augment foreign reserves (reflected in the Financial Account). If the initial impact is an increase in foreign reserves which are not immediately converted into imports, they would be reflected in a corresponding increase in domestic liabilities. The resulting monetary expansion would lead to an increase in domestic expenditure which may create inflationary pressures. This may therefore lead to an increase in prices.

3.2.4 Hypothesis Four:

> There is a positive relationship between both private and public foreign capital inflows and economic growth.

This hypothesis tests whether there is a direct relationship between foreign capital inflows and economic growth. Foreign capital inflows provide additional resources which can be invested in the economy. To the extent that the resources are chanelled to productive investments, this would lead to an increased rate of economic growth. However, foreign capital inflows may fail to contribute to economic growth even though they have contributed to capital formation. This would occur if the foreign capital is invested in unproductive projects which do not lead to increased output. We therefore need to test whether foreign capital inflows actually increase the rate of economic growth.

3.3 Methodology

The hypotheses stated above are tested below using the ordinary least squares multiple regression technique. The dependent variables are investment (defined as total

gross fixed capital formation at current prices); imports and exports of goods and services both at current prices; the money base; and the rate of growth of gross domestic product (GDP) where GDP is at factor cost and at 1976 prices. The explanatory variables are private and public net foreign capital inflows. We shall use long term capital inflows only. Short term foreign capital inflows are highly volatile and because of their short duration, their effects may not be felt in the economy. All the variables are measured in millions of Kenya pounds. The data used are drawn from various issues of the Economic Survey and the Statistical Abstract and also from the Central Bank. The reliability of the data and the methods of compilation are dealt with in detail in Chapter Four. To test the hypotheses we shall focus on the sizes, signs and statistical significance of the coefficients of both private and public foreign capital inflows. We shall also exaine the coefficient of multiple determination.

3.3.1 The Model:

The model used is composed of five basic equations each of which will be used to test a particular hypothesis. The equations are all linear although there is no particular reason to restrict ourselves to linear equations. This may

however be useful for comparability because most of the other studies for other countries have used linear relationships. In the actual analysis however, we may change the specifications depending on the performance of the model. The following are the proposed equations of the model:

$$I = a_0 + b_0 FP + C_0 FG + \ell_0 \quad .... \quad .... \quad .... \quad (3.1)$$

$$M = a_1 + b_1 FP + C_1 FG + \ell_1 \quad .... \quad .... \quad .... \quad (3.2)$$

$$X = a_2 + b_2 FP + C_2 FG + \ell_2 \quad .... \quad .... \quad .... \quad (3.3)$$

$$B = a_3 + b_3 FP + C_3 FG + \ell_3 \quad .... \quad .... \quad .... \quad (3.4)$$

$$\dot{Y} = a_4 + b_4 FP + C_4 FG + \ell_4 \quad .... \quad .... \quad .... \quad (3.5)$$

and $b_0 = C_0 = 1$; $b_j, C_j > 0 \quad (j = 1, \ldots, 4)$

where:

I = Total Investment (Total gross fixed capital formation at current prices)

M = Imports of goods and services at current prices

X = Export of goods and services at current prices.

B = The money base (defined as net foreign assets at the Central Bank and lending by the Central Bank to the central government, other public sector and to commercial banks.)

$\dot{Y}$ = Rate of growth of real GDP (1976 Prices).

FP = Long term private capital inflows.

FG = Long term public capital inflows.

ℓ_j = The stochastic error term (j=0; ...,4).

As stated earlier all the variables are measured in millions of Kenya pounds.

Looking at this model, we have excluded many other variables which are important determinants of the dependent variables. For instance the level of income and relative prices determine imports. However, the number of variables to be included in a model depends on the nature of the phenomenon being studied and the purpose of the research. Here we are interested in the

effects of foreign capital inflows on the dependent variables only. We are not researching on what determines the dependent variables as such. However, the exclusion of such important variables may lead to mis-specification of the model. In some preliminary runs, we included the level of real income in the trade equations. The results showed a very strong multicollinearity problem which forced us to drop the variable. Also the inclusion of more variables was constrained by the degrees of freedom. We therefore retain the above model so long as the performance is reasonably good.

CHAPTER FOUR

THE SOURCES, NATURE AND LIMITATIONS OF THE DATA

4.1 Introduction

This chapter is divided into two major sections. Section One describes the nature and the sources of the Capital Account data which can be used for balance of payments analysis in Kenya. As we shall see, there are various sources from which the data can be obtained but some of them are not fully developed. The second Section deals with the major limitations of the available data. Although much of the work in the chapter lacks originality the exercise is useful because of the following reasons:

(a) It will help in understanding the nature of the data which can be used for analysing the Capital Account of the balance of payments in Kenya. There are conceptual and definitional problems which may affect the interpretation of the data. It is therefore important to know what kind of data are available, what they are composed of and the way they are compiled before any analysis can be undertaken. Also the nature of the data can influence the results of any empirical analysis and the user of the data should be aware of this.

(b) It will also help in identifying the actual and potential sources of Capital Account data in Kenya. Some of these sources may not be known because many users rely on the published data. If all the sources were developed, the problems of inaccuracy and unreliability can be minimised through comparisons and counter-checking. Also such information is useful in designing a more elaborate system of data collection in future.

(c) Finally it will alert the users of the Capital Account data on the problems which affect this portion of our statistics. As we saw earlier in Chapter One, there are serious discrepancies in the data from various sources. This was verified by comparing data on identical items from each of the identified sources. Investigations at the primary sources where these data were obtained indicated that these differences were largely explained by the problems of data collection and compilation. This will be seen in the sections which follow. Also identification of the problems can help in evaluating the accuracy, reliability and overall usefulness of the available data. Given that data are increasingly being used in economic models, it is necessary that the users be acquainted with the deficiencies in the statistics.

4.2 The Sources and Nature of the Data

In Kenya, there are several sources from which Capital Account data can be obtained. The main sources are the Central Bureau of Statistics (CBS) of the Ministry of Finance and Planning, and the Exchange Control and the Foreign Departments of the Central Bank of Kenya (CBK). The Exchange Control Department has two subsidiary sources which provide similar data on capital inflows and outflows. One is the Investments Office which deals with matters pertaining to foreign Investment as they relate to exchange control regulations. The other is the returns by commercial banks through the Exchange Control Notice Number 21 (EC21). The Investments Section of the Ministry of Finance and Planning is also a potential source of data although the data are duplicated in the Investments Office of the Central Bank. Finally, there are international sources such as the International Monetary Fund (IMF). Apart from the CBS and the IMF data, the rest have partial coverage. Also these are the only two sources which publish their data. Each of the sources mentioned above differs from the rest by the degree of detail and classification although the overall figures are supposed to be the same. We shall see why these figures differ in the next major section (i.e. Section 4.3). In the subsections which follow, we examine the nature of

the data from each source.

4.2.1 The CBS data

The CBS compiles its balance of payments data on the basis of the IMF Manual.[1] It however publishes them in a different form as we shall see later. There are three main accounts namely the Current, Capital and Financial Accounts, but here we are interested in the Capital Account only. The Capital Account shows changes in the assets and liabilities of the country resulting from transactions between Kenyan residents and foreigners. Assets are defined as capital claims on foreigners by residents while liabilities are capital claims by foreigners on residents. The method of compilation taken the form of a double entry system where each entry is recorded twice. The method is based on the rules of Credit and Debit similar to those applied in business accounts. A credit entry represents a decrease in assets or an increase in liabilities while a debit entry denotes an increase in assets or a decrease in liabilities. Conventionally credits are denoted by a positive sign while debits are denoted by a negative one. The CBS prepares two versions of the data which differ only in the

degree of aggregation. Only the highly aggregated version is published and the following categories appear both on the short and the long term account.[2]

(a) Private Capital

(b) Government Capital

(c) Government Corporations (Former East African Community Corporations only).

The Private Capital Account data are obtained through an annual Investment Survey which is conducted by means of questionnaires which are sent each year to all major firms having external transactions. This survey should cover virtually all transactions by public and private companies, bank and non-bank financial institutions (excluding the Central Bank); branches of foreign companies, subsidiaries and parastatals (government enterprises). Transactions by private individuals are not covered in the survey. The data for government capital flows are obtained from the Loans Section of the Ministry of Finance and Planning. This section gathers information from the various government ministries, departments, local authorities and the Central Bank. Data on Government Corporations is obtained directly from them.

A distinction is made between long and short term capital and is based on the definition in the IMF Manual which considers the formal criterion of original contractual maturity. Longterm capital is termed as capital with an original contractual maturity of more than one year or with no stated maturity like corporate equity. On the other hand short term capital is defined as capital payable on demand or with an original contractual maturity of one year or less. A slight variation appears on the Kenyan data. Due to unfavourable economic conditions the country may be unable to meet all her obligations in remitting dividends and interest abroad at the specified time. Under such circumstances, those delayed payments which are due but not paid are defined as short term capital liabilities.

The CBS does not however strictly follow the double entry system of accounting as outlined in the IMF Manual. There is a slight difference because both credits and debits are recorded net of capital repayments. By capital repayments here, we mean transactions accruing from a country to the rest of the world or from the rest of the world to the country, or both, involving the following: loan armortization, purchase of foreign-owned equity by local investors and any other transactions whereby one party is reducing the capital claims it owes to the other. The IMF Manual recommends net recording in direct investment

transactions only.[3] Following the double entry system of accounting adopted by the IMF Manual, capital repayments made abroad by Kenyans are supposed to be entered in the debit side because they represent a decrease in liabilities. Similarly capital repayments by foreigners to Kenyans should be entered on the credit side because they represent a decrease in assets held by Kenyans abroad. But in the CBS system of recording, capital repayments by Kenyans abroad are entered on the credit side (deducted from receipts) while capital repayments to Kenyans by foreigners are entered on the credit side (deducted from outward investments). Both entries are however entered with an opposite sign to what could have appeared if we followed the system by the IMF Manual. This ensures that the overall effect is nil although as we shall see in the next paragraph, some complications may arise in interpreting the CBS data. These should be noted by anyone interested in the Capital Account data.

Firstly net recording of both credits and debits means that there are no gross figures available in our published statistics. Gross figures are however useful for they show the actual magnitudes of the capital flows. There are cases where we cannot use net figures. For instance when we want to draw up a borrowing plan for the country we need gross figures. Since net figures can be calculated from

gross figures, gross recording should always be preferred. It is because of this system of netting both credits and debits that we find a credit on the debit side or a debit on the credit side or both in our published data. Such entries should be interpreted as of the opposite sign to the norm. Also using the accounting system as used by the CBS credit entries do not correspond to all capital inflows. This is because some capital inflows are entered on the debit side. These are capital repayments by foreigners to Kenyans. Similarly debit entries do not correspond to all outflows because capital repayments made by Kenyans abroad are entered on the credit side. This CBS presentation has a different interpretation. A net credit entry means that capital repayments made by Kenyans to foreigners have been deducted from the foreigners' total claims on the country. A net credit is therefore a measure of the net external indebtness of the country in a given year. In a similar argument a net debit is a measure of the country's net external investment position. This net concept is different from the normal usage of the word where a net entry means credits minus debits.

Finally it should be noted that for the years 1973 through 1975 the subheading on Government Capital includes capital grants to the government. These capital grants

are defined as what appears in the statistical publications under the Government Development Appropriation Account. Although this method of recording capital grants is in conformity with the United Nations System of National Accounts (SNA) it violates the IMF principles of compilation. Therefore to obtain a consistent data series capital grants should be removed from the Government Capital Account.[4]

Besides the published data on the Capital Account, the CBS has disaggregated data which can be obtained from files. This version is never published by the CBS and the available series begins from 1976.[5] The breakdown of the various components is presented below:

Private Long Term Capital

I Direct Investment Capital[6]

1. Equity Capital
   - Change in Ownership
   - New Subscriptions

2. Direct Investment Loans
   - Drawings
   - Repayments

3. Reinvested Earnings

4. Other

   - Net branch accounts with headquarters.

II Other Long Term Capital

1. Equity Capital

   - Change in Ownership

   - New Subscriptions

2. Debentures

3. Other Long Term Loans

   - Drawings

   - Repayments

4. Trade Credits and Other Inter Company Accounts (Net)

5. Investment in Fixed Assets.

Government Long Term Capital

1. Changes in Holdings of Foreign Loans:

   - Drawings

   - Repayments

2. Changes in Stock in respect of Foreign Issues:

   - New Issues

   - Retirements

3. Other Assets and Liabilities.

Private Short Term Capital

1. Trade Credits (Net)

2. Short Term Loans
   - Drawings
   - Repayments

3. Other Short Term Capital
   - Dividends due but not paid
   - Interest due but not paid

4. Changes in Blocked Accounts.

Government Short Term Capital

Under this category, only those short term assets and liabilities that do not serve as part of foreign exchange reserves or as reserves of the Central Monetary Authorities are included. Otherwise government capital transactions are rarely short term.

4.2.2 The CBK data

The Central Bank does not collect data primarily for balance of payments purposes. It is however a potential source of Capital Account data despite the fact that only partial data is available currently. As we stated earlier, there are two related sources for private capital flows. These are the Investment Office and the EC2i returns. Government Capital Account data is obtainable from the Foreign Department of the Bank.

Under the Exchange Control Act, all foreign firms operating in Kenya (whether locally or foreign owned) wishing to incur external liabilities or even to undertake investments outside Kenya must seek approval from the Investments Office. This is done through an application stating the conditions under which the capital transaction is to be undertaken. Also if a foreigner wishes to invest his capital in Kenya he must seek protection under the Foreign Investments Protection Act (FIPA). This Act enables him to repatriate his capital in future or to make remittances. Matters relating to FIPA are dealt with by the Treasury but the Investment Office receives copies of the certificate of Approved Enterprise if their capital has been approved under FIPA regulations. The investment office

uses this information to approve repayments on loan capital and equity repatriation, plus all other remittances such as profits, dividends and interest. The investors must however prove that the transactions actually took place by providing supporting evidnece from the banks. Therefore all loans and share capital received including suppliers' credits are available from this office. Also outward investment data are available. The data appear under the following headings:

(a) Share and Loan Capital (Liabilities)
- Receipts
- Repayments

(b) Outward Investments (Assets)
- Receipts
- Repayments

Although the data is partial, the Investment Office is in a strategic position to obtain complete information for private capital inflows. This is mainly because private firms must seek approval from the Investment Office before any foreign transaction can be undertaken. The Investments Office has attempted to

tabulate the data for internal use by the bank but the data suffer from a variety of problems as we shall see in Section 4.3 below.

The returns by commercial banks provide information on all external private transactions passing through them. This information is supplied to the Exchange Control Department by individual commercial banks as is provided in the Exchange Control Act. The presentation is exactly like that of the Investment Office. The only difference is that commercial banks record cash transactions only, which omits receipts on suppliers' credit. The banks are unable to capture other Capital Account items such as reinvested earnings.

4.2.3 Other Sources

In addition to the sources discussed above, the IMF publishes complete balance of payments data for all member countries including Kenya. For Kenya the information is provided by the Central Bureau of Statistics and is the same as the one published in the Statistical Abstract and the Economic Survey. However, the IMF data are useful because they are highly disaggregated. This enables the

analysis of various aspects of the Capital Account which is not possible with aggregated data. Part of the disaggregation is however made possible by certain estimations and adjustments which may introduce some errors.

4.3 Data Limitations

In the previous sections we discussed the sources and nature of the available data on the Capital Account in Kenya. We saw that the data for each of these sources are different from the rest. With such discrepancies, it is difficult to ascertain which set of data is more accurate and reliable. A reconciliation exercise was undertaken to explain the cause of these differences. This involved investigations in the Central Bank and the Central Bureau of Statistics which are, as we have discussed above, the primary sources for these statistics. It was found that each of these sources has some weaknesses regarding the methods of data collection and compilation. Besides helping to explain the discrepancies between the sets of data, these weaknesses help in evaluating the accuracy and reliability of the data. In the following subsections, we present the major weaknesses for each set of data.

4.3.1 The CBS data

The CBS data have one advantage in that they cover all the items in the Capital Account unlike data from other sources which are partial. However, as we saw in Section 4.2, the data are based on questionnaires sent to firms and their accuracy is therefore dependent on the response by these firms. According to the statistical clerks in the CBS, some firms fail to respond while others may report inaccurate figures. Some of the firms respond after a reminder is sent to them by the CBS. The CBS does not provide information on the non-response rate although it is in a position to do so. This could help to indicate the degree of under-coverage in the data. It was found that before 1980 imputed figures were used to cover the non-response firms. There is no basic formular and these imputations are therefore based on one's "best guess". This is arrived at by looking at some indicators such as the profit and loss statements and the balance sheets of the particular firms which show their performance. By looking at these and depending on what one feels about the prevailing economic circumstances, one can get a rough indication as to whether a particular firm was able to repay debt or whether it borrowed more. The final figure is however determined subjectively.

Also the CBS Investment Survey covers about 800 firms while Exchange Control records show over 2,500 firms with external capital transactions. This suggests that there is some degree of under-coverage in the CBS data although this cannot be indicated merely by the number of firms not covered in the survey. This is because all the firms do not undertake external transactions every year. Also some firms operate under the auspicies of a Holding Company which undertakes all external transactions for the individual units. Nevertheless some degree of under-coverage is expected although the actual magnitude is a subject for empirical investigation. Also the CBS may fail to capture all the newly established firms until some time later. This may happen if the officers concerned do not make periodical checks for newly established companies in the Registrar of Companies office. Looking at the CBS data on the Private Capital Account, the only major problem is undercoverage. If such data were used for estimation purposes, the only major effect would be on the magnitudes of the parameters and not the direction of the effect. Moreover, the problem can be removed by estimating the percentages of under-coverage for a couple of years which can be used to adjust past data series. This paper does not provide precise methods for adjustment but such can be devised. For instance this can be done by means of a

survey of the major items in the Private Capital Account using the list of firms in Exchange Control records. The percentages of undercoverage is then determined by comparing the figures from the survey for a particular year with figures for identical items in the CBS data. Once this is determined, the CBS data can be "blown up" by the same percentages. Also for future data the CBS can widen the coverage to include all the firms in the Exchange Control records and then try to enforce compliance. This is not difficult because the provisions of the Statistics Act (Cap 112) empower the CBS to do this.

The CBS data on the Government Capital Account is also faulty. The only major item in this Account is loan capital which is either in terms of cash loans or credit purchases (suppliers' credit). Apart from minor computational errors (such as omissions) the cash loans are recorded correctly and their records tally with those at the Central Bank. On the other hand, the system of recording suppliers' credit is unreliable. The CBS records the amounts in the agreements between the Ministry of Finance and the donors. The records therefore show agreements and not actual flows. Investigations revealed that the Ministry of Finance does not follow up to ascertain whether the goods are actually delivered at

the time they come. It is, therefore, possible that actual credit purchases are less than what appears in the records.[7] If capital inflows are recorded for goods not actually delivered, the contra entry in the Current Account is omitted resulting in a poor presentation of the data. Moreover it is misleading to use the magnitudes of such inflows to measure the contribution of foreign capital inflows to the growth of the economy. Another effect on the economy is that repayments are made for loans not utilized for the benefit of the country. Although we cannot state with certainty the seriousness of such imperfections, the users of such statistics should be aware that the possibilities exist.

4.3.2 The CBK data

Although the Central Bank is in a position to provide a complete set of the Capital Account data, the data available now are partial. In the Private Capital Account, we can only obtain data on loan and share capital. These are available from the Investments Office and the EC21 returns. As we stated in section one of this chapter these two sources share the same classification of their data. Their methods of data collection and classification

are not however suitable for balance of payments analysis. Several reasons help to explain this. Both loan and share capital are lumped together although it would be more desirable to show them separately. This is not a statistical error because overall amounts are not affected, but their separation would aid in economic analysis because each has different economic implications. For instance remittances on equity capital are made when the economy improves while interest and loan repayments are made irrespective of the prevailing economic conditions because of constitutional guarantees. Also for equity capital, the external liability is not affected by movements in exchange rates.[8] The aggregation of loan and equity capital may also inhibit the analysis of the structure of foreign investment in the country which may be important for policy purposes. Foreign investors may invest their capital through the purchase of equity or provision of loans depending on a number of factors such as their objectives and the nature of the incentives perceived in a particular country. As we have seen each of these forms of financing has different implications to the economy. It is therefore necessary to analyse how foreign investors provide their capital, whether this is in line with our objectives and if not, the policy measures needed to correct their behaviour. This is not possible with loan and share capital lumped together.

Another limitation is that there is no distinction between long and short term capital. This is necessary for balance of payments presentation because each may have a different impact on the growth of the economy.

The data from the Investment Office is obtained when foreign investors apply for permission to bring in capital or to make remittances. However the records show what has been approved and not the actual amounts of the transactions. The recording of approvals has serious effects on the timing and the accuracy of the data. In the case of receipts approvals differ substantially from actual inflows because of lags in reporting by the investors when they actually bring in their funds. Most investors fail to report capital receipts until the time they need to repay their debt which may be more than a year after the actual inflow of funds took place. Even if they report in time there is also a time lag between the date of approval and the actual time of the inflow. This problem of timing receipts is aggravated by the fact that the lag is not uniform over time and for all the firms receiving foreign capital. If this was the case the data could be corrected by introducing a time lag in the available data from the Investment Office. The lagging can be done for periods shorter than a year

because the data are available on a monthly basis. However, this is not possible because the lags in reporting are random and do not have any systematic pattern. Also approvals differ from actual inflows because foreign firms do not necessarily receive the exact amounts of capital approved. Depending on the prevailing economic circumstances a firm may receive less than what was approved or it may decide to draw the total amount in instalments. All these factors explain the unreliability of the data. Repayments are not seriously affected because approvals for remittances are valid only for three months and many foreign investors are unlikely to delay their remittances once permission has been granted.[9] Finally, the treatment of suppliers' credit distorts the data from the Investment Office. Prior to 1980, receipts of suppliers' credits were excluded from the rest of the loan receipts but were included in their repayments. This understates loan receipts and therefore affects the net figure. The negative net figures in the data from the Investment Office could partly be explained by this. This was corrected in 1980 although cash loans and suppliers' credits are still lumped together. These should be shown separately for analytical purposes because suppliers' credit tend to be short term in nature and do not necessarily finance capital.

The EC21 data captures capital transactions in cash only. Therefore receipts on suppliers' credits are omitted while their repayments are included. This also explains the major reason for having negative net figures from this source.

Government capital transactions are availabe from records in the Foreign Department in the Central Bank. This is a major source for the data (even for the CBS) but the Bank does not tabulate them. The only problem is that the Bank does not capture information on suppliers' credit receipts. The repayments are however captured because they pass through the Bank. All other transactions regarding government external assets and liabilities are obtainable from the Bank in an accurate form.

4.3.3 The IMF data

We noted that the IMF data are derived from reports provided by the CBS. Apart from some adjustments and estimates they are therefore not significantly different from the CBS data. They are however more useful if one is interested in disaggregated data. A description of

the compilation and coverage plus the underlying assumptions of the items presented can be found in the IMF Handbook.[10]

4.3.4 The CBS data: Errors and Omissions

We have seen that the CBS data suffer from some problems which affect their coverage and accuracy. These problems are reflected in the Errors and Omissions which is a balancing item. Errors and Omissions measure the net difference between recorded credits and debits which arise as a result of difficulties in obtaining complete and accurate data for all balance of payments items. An error occurs when one side of a transaction is recorded while the other is not. If both sides are omitted, there is no accounting error because both offset each other. This means that we cannot obtain gross errors and omissions if both sides are omitted. In the case of the CBS data described above, errors and omissions may arise from the following: exclusion of private individual transactions, undercoverage of firms in the Investment Survey, and misreporting of public capital flows.

Private individual transactions are difficult to capture. Exchange Control regulations rarely allow individuals to invest outside the country and therefore many of these private individual transactions involve illegal transfer of capital outside. Given that there is some illegal activity involved, it is difficult to capture these transactions. However, a rough indication of the amounts involved can be obtained from frequent newspaper reports which suggest that this is a rampant phenomenon.[11] On the other hand capital inflows by private individuals are uncommon because many foreigners bring their capital through established firms. Therefore, most of the omissions are likely to be on the debit side of the Capital Account. The way in which the errors and omissions are affected depends on the manner in which the capital outflow has been effected. For instance this could be through the sale of goods whose receipts are not brought back but invested outside the country. In such a case an entry is made at the Current Account but the other at the Capital Account is omitted. Also other errors may arise because of exchange rate problems. This occurs when foreigners (mainly tourists) bring in foreign exchange without the knowledge of the authorities to take advantage of the higher exchange rate at the 'black market'. If this happens an entry is omitted in the

Financial Account which gives rise to errors and omissions.

Similarly undercoverage of firms will have a greater effect on the credits side than on the debits side because many firms are not likely to invest outside the country. Under-coverage means that an entry is omitted in the Capital Account while the other is recorded either at the Current or the Financial Accounts depending on the type of the capital flow. If the capital flow is in the form of cash the omitted entries would be on the Capital and Financial Accounts. If it was in the form of suppliers' credit the omitted entries would be one at the Current and the other Capital Accounts. Finally misreporting of government credit purchases means that an entry is made at the Capital Account but omitted at the Current Account. Looking at the data problems mentioned in the chapter it appears that most of the errors and omissions arise from the incomplete and inaccurate data from the Capital Account.

4.4 Conclusions

From the above findings we observe that despite the apparent scarcity of Capital Account data in Kenya, there

are potential sources which are capable of providing all the required information. Each of the sources may not be enough by itself to provide a complete and accurate set of data for all the items in the Capital Account. There is therefore need to coordinate all the local sources so as to develop a sound system of data collection and compilation in future. This is not difficult since most of these sources are already established and they only need reorganization.

We have also noted that the data from each of the sources has a number of limitations. The CBK data do not cover all Capital Account items and therefore are incomplete. The available data can still be useful if they were accurate. It was however found that the data are inaccurate and have timing, classification and under-reporting problems which make them unsuitable for any empirical analysis. This is worsened by the fact that the errors do not have any systematic pattern of behaviour which can allow for correction. For instance the timing problem can be corrected by use of lags. The data for the Public Capital Account are however correct except their exclusion of receipts on suppliers' credit. On the other hand the CBS data are complete and their classifications and timing are up to the requirements of the

balance of payments presentation. There are, however, some possible inaccuracies due to underreporting and omissions. It is nevertheless possible to calculate an estimate of the percentage of under-coverage which can be used to update the available data. If the data were used as they are for empirical work, the major effect would be a downward bias on the magnitudes of the estimated parameters and not on the direction of effect. The data can therefore be used although one should interpret the results taking the downward bias into account.

FOOTNOTES

1. IMF: Balance of Payments Manual, Fourth Edition, Washington, 1977. This is the current edition of a series of handbooks provided by the IMF to member countries which guide them in reporting balance of payments statistics.

2. This is the breakdown currently in use. Some previous classifications separate government enterprises (parastatals) from the rest of private capital. In other earlier cases also, local government is shown separate from central government.

3. IMF Manual, op.cit. p.140.

4. In some of the revised editions of the statistical publications the grant element has already been removed. One therefore needs to confirm whether this is the case before any alterations are undertaken.

5. Before 1977, this information was being collected by the Statistical Department of the now defunct East African Community. When the Community broke down, this task was taken over by the Central Bureau of Statistics. Much of the earlier information went missing during the transitional period and therefore cannot be traced.

6. In Kenya, direct investment is distinguished on the basis of equity ownership. A firm with 51% or more of of equity capital owned by a foreigner or foreigners is defined as direct investment. There are however some problems in defining direct investment. These can be found in the IMF Manual, op.cit, pp.136-142.

7. Although it is difficult to assess the extent of the problem, discussions with some of the officers in the External Aid Division of the Ministry of Finance suggest that some of the goods and services covered under the loan do not find their way into the country.

8. Equity Capital is denominated in local currency while loans are denominated in foreign exchange. Therefore external loan liabilities move with movements in the exchange rate while equity liabilities do not.

9. This is supported by the fact that very few firms apply for revalidation which is a requirement if the approved applications expire. According to the recording clerks, this rarely happens.

10. IMF: Balance of Payments Yearbook, Volume 32, Washington, 1981. pp.280-285. This information is also available from other volumes of this annual publication.

11. This is a serious problem in many African countries. See for example The New African, IC Magazines, No.184, January 1983, pp.11-18 and pp.39-40.

CHAPTER FIVE

EMPIRICAL ANALYSIS AND RESULTS

In this chapter, we present the results of the empirical analysis undertaken to test the hypotheses in Chapter Three. As stated earlier, we used a multiple linear regression model. The computations were done on an Apple II computer with the aid of a programme known as Microstat Version 2.23.

The data used cover the period 1966-1980. The year 1966 was used as the benchmark period because before 1966, most of the capital transactions for the whole of East Africa were undertaken through Kenyan banks. Although the particular countries could settle their liabilities with each other, the data series obtained before this year may not be consistent with the series for the period under study. By the end of 1966, each of the countries had established its own Central Bank through which all foreign transactions were handled. We therefore felt that the study should begin from 1966.[1] Also it was not possible to go beyond 1980, because at the time this analysis was undertaken, the revised data series for capital inflows was not available for later years.

In the analysis, various headings in the Long term Capital Account have been redefined to fall under two categories; that is private and public capital inflows. The data are presented at the end of this paper in the Appendix where these redefinitions are explained. The dimensions of these data are all in millions of Kenya pounds. Also all the variables are denoted in current prices . The use of data at current prices has a major limitation in that inflationary effects cannot be isolated from real effects where this is required. However, we could not obtain the values of all the variables at constant prices and therefore we had to use them valued at current prices. The values of foreign capital inflows are always reported at current prices and it is difficult to obtain an appropriate price index which can be used to deflate them, bearing in mind their financial (not real) nature. It would be inappropriate to regress constant values on current ones. This limitation should be born in mind when interpreting the results. In the subsections which follow, we provide the results for each of the four hypotheses. For the estimated equations presented, the number in brackets immediately below the coefficients are the t-statistics. These provide a measure of whether the coefficients of the various equations are significantly different from zero. $\bar{R}^2$ is the adjusted coefficient of determination and D.W. is the Durbin-Watson statistic.

D.F. indicates the degrees of freedom.

5.1 Foreign Capital Inflows and Investment

The hypothesis under this heading stated that foreign capital inflows increase total investment in Kenya by exactly the amount of the capital inflow. This means that a shilling of foreign capital inflow would increase total investment in the country by one shilling. The focus of interest in the investment equation is therefore the sign, size and statistical significance of the coefficients. According to the hypothesis, the size of the coefficients should not be significantly different from one. Regressing gross fixed capital formation on both private and public capital inflows, the following equation was obtained:

$$I = 54.027 + \underset{(3.949)}{2.890FP} + \underset{(6.577)}{2.578FG} \quad \ldots\ldots \quad \ldots\ldots \quad (5.1)$$

$$\bar{R}^2 = .946 \qquad D.W. = 2.130$$

$$D.F. = 12$$

where I = gross fixed capital formation at current prices; FP = net private capital inflows; FG = net public capital

inflows. All the variables are in millions of Kenya pounds.

Looking at the result, the coefficients for both types of capital inflows are positive as expected and they are significantly different from zero at the 5% level of significance. The $\bar{R}^2$ is good and the D.W. shows no presence of first order serial correlation.[2] The coefficients were statistically tested to verify whether they were significantly different from one. This was done by comparing the theoretical values of t at the 5% level of significance with the empirical values using a one tail test. The results indicated that the coefficients were significantly different from unity. We therefore reject the hypothesis and conclude that a unit increase in foreign capital inflows ceteris paribus increases total investment by more than the increase in foreign capital inflow. This suggests that foreign capital inflows stimulate domestic investment and are therefore useful. The magnitudes of the coefficients are very close to each other which suggests that both private and public capital inflows have similar effects on total investment in the current period.

We should however note that the variables are valued at current prices and the coefficients therefore represent money and not real effects. This means that a marginal

increase in a unit of foreign capital inflows is lower in real terms because of inflationary effects. The "real" coefficients are therefore lower. At the beginning of this chapter, we stated the reasons why we used current instead of real values even though the latter are appropriate in this case. Also in this equation, we are not investigating the determinants of investment. We are only interested in the effects of foreign capital inflows on domestic investment and this can be done by regressing total investment on the foreign capital inflows. Therefore, a high $\bar{R}^2$ should not be taken to mean that both types of foreign capital inflows are the main determinants of total investment. In fact foreign capital inflows and total investment should be highly correlated because the former are part of the latter.[3] Nevertheless, this result tells us that foreign capital inflows stimulate domestic investment in the country. There are some reasons which tend to support this.

Firstly, the stimulatory effects could be due to backwards and forwards linkages which arise from the foreign capital inflows invested. The existence of backward linkages can be verified from the Kenyan Input-Output tables. Since the manufacturing sector is a major recipient of foreign capital inflows, part of the backward

linkages in the sector are attributable to foreign capital inflows. The backward linkages can be estimated by examining the proportion of linked domestic inputs for each sector. Looking at the technical coefficients for the 1976 Input-Output table, it was found that to produce one unit of output, all except three of the sectors labelled manufacturing (nos.5-19) used more than 50% of local inputs. The three sectors are: Manufacture of garments, Knitwear, and made up textiles; Manufacture of metal products, machinery and Miscellaneous manufacture of petroleum products. For public capital inflows we find that much of the public sector activity uses domestic inputs.[4] The apparent linkage effects are however, not as large as implied by this Input-Output table because of the indirect import requirements needed to produce the domestic inputs. If we consider both the direct and indirect effects, the domestic linkage effects would thus be substantially reduced. The existence of low linkage effects was also indicated by Langdon[5] who, in his study of Multinational Corporations in Kenya, showed that backwards linkages were few because 98% of the import-substituting firms imported over 70% of their Machinery and nearly 70% of these firms imported 70% of their raw materials. Since Multinational Corporations are part of foreign capital inflows, these findings can be taken as an indication of the low stimulatory effects of foreign

capital inflows as a whole. Moreover part of the other types of capital inflows is composed of tied aid (e.g. loans and equity tied to purchase of equipment and materials abroad) which tends to increase the import content.

The analysis above tends to suggest that the linkage effects of foreign capital inflows are low. This is, however, contrary to the results in equation 5.1 presented above. This apparent contradiction can be explained by the fact that there are other reasons why foreign capital inflows may have stimulatory effects on domestic investment. Firstly, we note that since the early 1970s, it has been the policy of the government to encourage local participation in investment (both public and private) with foreign capital. This means that most of the foreign capital inflows are associated with counterpart funds from domestic sources in the total investment package. In this case foreign capital inflows stimulate domestic investment if the domestically available funds could not have been invested without the foreign capital component. Such domestic investments occur at the same time as the capital inflows occur, i.e. the current period. Also it is in the regulations of some of the foreign donors that their aid finances only the foreign component of the investment. The rest of the investment funds must be raised domestically.

In such cases this acts as a stimulant to domestic investment. The World Bank is an example of such institutions although it reconsiders this regulation in certain cases.

The stimulatory effects do not necessarily occur in the current period alone. Their effects may be spread for more than one period. We therefore tried a lagged relationship to test the argument that the effects may be felt more strongly after one year. The following equation was obtained:

$$I_t = 56.594 + \underset{(4.211)}{4.160FP_{t-1}} + \underset{(4.582)}{2.418FG_{t-1}} \quad \ldots \quad \ldots \quad \ldots \quad (5.2)$$

$$\bar{R}^2 = .924 \qquad \text{D.F.} = 12$$

where the variables are as explained earlier and t is a time subscript.[6] The coefficient of private capital inflows increases substantially but the $\bar{R}^2$ falls. The other results are similar to the ones in the previous equation. The signs are positive, and the coefficient of public capital inflows is not very different in magnitude to the previous one . Both coefficients are also statistically different from one at the 5% level of significance.

Another specification was also tried where both the current and lagged variables were included. The estimated equation obtained is presented here below:

$$I_t = 42.737 + 1.671FP_t + 2.515FP_{t-1} + 2.618FG_t - .953FG_{t-1} \quad \ldots (5.3)$$
$$\qquad\qquad (2.634) \quad (3.536) \quad\quad (4.642) \quad (-1.299)$$

$$\bar{R}^2 = .973 \qquad\qquad D.F. = 9$$

The variables are as explained before and the D.W. is not useful in this case because with lagged variables the successive error terms are correlated; this also applies to equation 5.2. From equation 5.3 we find that the effects of private capital inflows on total investment are spread for a period of more than one year.

The magnitude of the coefficient of lagged private capital inflows is evidently larger than the coefficient in the current period. Moreover the current period coefficient is not significantly different from one (using a one tail test). We therefore find that the lagged effects are more important. This can be expected because there is sometime taken after the capital inflow occurs and before the investment project becomes operational. The current period effects could be taken to represent the domestically provided counterpart funds which occur at

the same time as the capital inflow. The lagged effects could be largely due to linkage effects. With public capital inflows the coefficient of the current values does not indicate any substantial change from the ones in the previous equations. The differences in magnitudes are negligible. The only coefficient which is not statistically significant is the one on lagged public capital inflows. This is largely due to the observed multicollinearity between this lagged variable and the current one. The multicollinearity problem even affects the sign of the coefficient. Otherwise the coefficient of lagged public capital inflows in equation 5.2 is positive and statistically significant at the 5% level. Dropping the lagged variable on public capital inflows we obtain the following result:

$$I_t = 44.587 + 1.642FP_t + 2.368FP_{t-1} + 2.030FG_t \quad \ldots \quad (5.4)$$
$$\qquad\qquad (2.504) \quad (3.261) \quad\quad (5.859)$$

$$\bar{R}^2 = .967 \qquad\qquad D.F. = 10.$$

The only coefficient with a noticeable change is the one on current public capital inflows which declines. The lagged effects of public capital inflows can also occur in the opposite direction; that is when future public capital inflows stimulate domestic investment at the current period. This is possible with government projects

where the government spends domestic funds and then claims reimbursement (from the foreign donor) in future.[7]

From these equations, we find that foreign capital both current and lagged have stimulatory effects on total investment in Kenya. The coefficients of the variables at the current period suggest that public capital inflows have more stimulatory effects. This is clearly supported by the magnitudes of the coefficients. We are however unable to make a similar comparison for the lagged variables because of the statistical insignificance of the coefficient of public capital inflows. Finally, we note that from the evidence above, foreign capital inflows stimulate domestic investment and these effects are spread for more than one year. The stimulatory effects are however not attributable to linkage effects only.

5.2 Foreign Capital Inflows and Trade

The relationship between these two types of capital inflows and trade was examined in the second hypothesis. Trade in this context was defined as imports and exports of goods and services. The hypothesis and the accompanying sub-hypotheses were that foreign capital inflows have positive effects on both imports and exports but the

effects on imports are greater than those on exports in magnitude. This then was said to create unfavourable balance of payments effects in the economy. Two regression equations were run using imports and exports of goods and services as the dependent variables. The following results were obtained:

$$M=93.645+4.229FP+4.216FG \quad ..... \quad ..... \quad (5.5)$$
$$(3.150) \quad (5.880)$$

$\bar{R}^2 = .929$ D.W. = 2.498

D.F. = 12

$$X = 81.248+5.433FP+1.880FG \quad .... \quad ..... \quad (5.6)$$
$$(4.022) \quad (2.605)$$

$\bar{R}^2 = .872$ D.W. = 2.237

D.F. = 12

All the variables are as previously defined. From both equations, the coefficients are all positive and statistically significant at the 5% level of significance. In both cases therefore, the coefficients are significantly

different from zero. The coefficients of determination are reasonably high and the Durbin-Watson Statistics show no serious autocorrelation. In terms of magnitude, the coefficient of private capital inflows on exports is higher than the one on imports. But in the case of public capital inflows the import coefficient is greater than the exports coefficient. On the basis of these findings we accept the first two sub-hypotheses and reject the third. This suggests that private capital inflows earn more foreign exchange through exports of goods and services than they use through imports of goods and services. This has favourable balance of payments effects to the country. However, if we consider the outflows of investment income associated with these foreign capital inflows, these favourable effects may be greatly diminished. But in the case of public capital inflows more foreign exchange is spent through imports than is created through exports. This has unfavourable balance of payments effects. It should be noted that these balance of payments effects are only associated with the two types of foreign capital inflows. The overall effects would introduce other factors such as real income and relative prices.

Looking at the coefficients of the import equation, their magnitudes are not significantly different from each other. Therefore the marginal propensities to import

from both types of foreign capital inflows are similar. This is expected because the private and public sectors are heavy consumers of imports in Kenya. In the exports equation, the coefficient of private capital inflows is greater than the one of public capital inflows. A possible explanation is that public capital inflows are mainly invested in projects which produce non-traded outputs (note that we have included public enterprises under private capital inflows). The only way public capital inflows would stimulate exports is through the provision of infrastructure. Also the effects may take long because infrastructure investments have a long gestation period. The long term effects may however be positive. This is unlike private capital inflows which can be invested in projects which directly produce for export.

A slightly different specification was tried where a multiplicative dummy variable was included as a third explanatory variable (with 1977 = 0). This variable captures the effects of the 1977 coffee boom on trade. During this period both imports and exports by the private sector were expected to be higher than under normal circumstances because of the increased availability of foreign exchange from coffee exports. Coffee prices had

hit a maximum high because of shortages from the main world producers such as Brazil and Angola. The equations estimated are presented here below:

$$M=99.308+6.013FP+4.491FG-2.472DFP \quad \ldots\ldots \quad (5.7)$$
$$(3.669)\ (6.533)\ (-1.684)$$

$\bar{R}^2 = .938$ D.W. = 2.382

DF = 11

The variable DFP is the multiplicative dummy on private capital inflows. All the other variables are defined as before. The exports equation was as follows:

$$X=91.943+8.803FP+2.398FG-4.669DFP \quad \ldots\ldots \quad (5.8)$$
$$(9.022)\ (5.860)\ (-5.342)$$

$\bar{R}^2 = .962$ D.W. = 2.022

D.F. = 11

The inclusion of this dummy variable improves the fit of the two equations. In the exports equation, the adjusted coefficient of determination improves substantially

(from $\bar{R}^2$ = .872 to $\bar{R}^2$ = .962), but in the imports equation the improvement is marginal (from $\bar{R}^2$ = .929 to $\bar{R}^2$ = .938). The coefficient of the dummy variable in the import equation is not statistically significant while it is highly significant in the exports equation. The lack of statistical significance in the import equation can be explained by the presence of strong multicollinearity between the multiplicative dummy variable and private capital inflows (these two variables have the same values except in 1977 when DFP=0). The coefficient of the multiplicative dummy in the exports equation is however statistically significant despite the presence of similar multicollinearity. This suggests that the dummy variable in the exports equation has such a strong statistical significance that the effects of multicollinearity do not change anything.[8] A similar dummy variable was also introduced for public capital inflows but there was no significant improvement. We therefore dropped it. We also find that the magnitudes of the coefficients for both variables change although this does not change our earlier conclusions. The second set of equations (equations 5.7 and 5.8) are however better than the original ones. The new specification therefore improves the results.

Regressing the trade deficit MX, (defined as M-X), on the two types of foreign capital inflows, the following equations were obtained:

$$MX = 12.397 - 1.205FP + 2.336FG \quad \ldots\ldots \quad \ldots\ldots \quad (5.9)$$
$$(-1.380) \quad (5.011)$$

$\bar{R}^2 = .735$ D.W. = 2.103

D.F. = 12

$$MX = 7.365 - 2.790FP + 2.092FG + 2.197DFP \quad \ldots\ldots \quad (5.10)$$
$$(-2.971) \quad (5.313) \quad (2.611)$$

$\bar{R}^2 = .822$ D.F. = 11 D.W. = 2.405.

From these two equations, it can be verified that the coefficients are equal to the algebraic difference between the estimated import and export equations. In equation 5.9, $\bar{R}^2$ is relatively low and the coefficient of private capital inflows is not statistically significant at the 5% level. The D.W. is however good. After introducing the dummy variable (DFP) in equation 5.10, the $\bar{R}^2$ improves substantially and all the coefficients are statistically significant. This result tells us that

during the boom period a unit of private capital inflows reduced the deficit by 2.790 units. Under normal circumstances, a unit increase in foreign capital inflows reduced the deficit by .593 units (2.197-2.790). On the other hand a unit increase in public capital inflows increases the deficit by 2.092 units. The favourable effects of private capital inflows are therefore eroded by the unfavourable effects of public capital inflows.

Finally, it should be noted that this analysis does not take into account the effects of transfer pricing (i.e. over- and under-invoicing). This phenomenon is a method of resource transfer from the country through overvaluing imports and undervaluing exports. Although this practice is known to exist in Kenya it is very difficult to isolate its effects from trade data. This should therefore be taken into account when interpreting the results.

5.3 Foreign Capital Inflows and Money Supply

We hypothesised that both types of foreign capital inflows have an expansionary effect on money supply in Kenya. The monetary base, which is a determinant of money supply was regressed on both private and public

capital inflows. As stated earlier, the monetary base (B) was defined as net foreign assets at the Central Bank; and lending by the Central Bank to the Central Government, other Public Sector and to the Commercial Banks. The following equation was obtained:

$$B=34.418+.862FP+.998FG \quad \ldots\ldots \quad \ldots\ldots \quad (5.11)$$
$$(4.876)\ (2.064)$$

$\bar{R}^2 = .887$ D.W. = 2.483

D.F. = 10

In this equation alone, the data series covers the period 1968-1980. This is because the data on the monetary base were not available for the period before 1968. The results of equation 5.11 show that the coefficients of both types of capital inflows have the right signs and that they are statistically significant at the 5% level. The $\bar{R}^2$ and the D.W. are reasonably good. This result therefore supports our hypothesis. A one tail test showed that neither of the coefficients was significantly different from one. This suggests that an increase in foreign capital inflows increases the monetary base by the amount of the inflow. Since the monetary base is a determinant of money supply, we can argue that

foreign capital inflows have a positive effect on the money supply and may therefore contribute to inflation. The coefficient of private capital inflows was slightly lower in magnitude than the one of public capital inflows.

We proceeded to test directly whether foreign capital inflows contribute to inflation by regressing percentage changes in the GDP deflator (PGDP) on both types of foreign capital inflows. The following equation was obtained:

$$PGDP = .997 + .302FP - .036FG \quad \ldots\ldots \quad \ldots\ldots \quad (5.12)$$
$$(3.319) \quad (-2.385)$$

$$\bar{R}^2 = .413 \qquad D.W. = 1.969$$

$$D.F. = 11$$

where PGDP is the rate of change of the GDP deflator and the rest are as defined earlier. The coefficients are both statistically significant at the 5% level but the one on public capital inflows has a negative sign. Although this coefficient is negative its size is relatively small. The magnitude of the coefficient of private capital inflows is also small. We therefore conclude that foreign capital inflows do not contribute substantially to inflation as

measured by the rate of change of the GDP deflator.

5.4 Foreign Capital Inflows and Economic Growth

The last hypothesis examined the direct relationship between foreign capital inflows and the rate of economic growth. Economic growth rates were calculated as percentage changes in GDP at constant 1976 prices ($\dot{Y}$). Using this as the dependent variable, the following equation was obtained:

$$\dot{Y} = 6.769 - 0.059FP + 0.015FG \quad \ldots\ldots \quad \ldots\ldots \quad (5.13)$$
$$(-1.617) \quad (.792)$$

$$\bar{R}^2 = .082 \qquad D.W. = 1.530$$

$$D.F. = 11.$$

From this equation there appears to be no association between foreign capital inflows and economic growth. The coefficient of private capital inflows is negative while the one on public capital inflows is positive. Neither of them is statistically significant. The $\bar{R}^2$ is very poor and the D.W. suggests serious autocorrelation. We therefore conclude that on the basis of the available evidence

there is no observable linear relationship between foreign capital inflows and economic growth in Kenya.

The poor result of equation 5.13 suggests that there was some mis-specification of the equation. Various non-linear relationships were tried to examine which of them fits best. Out of the various equations run, the following turned out to be the best:

$$\text{Ln}\dot{Y} = 3.137 - .507\ \text{LnFP} + .004\text{FG} \quad \ldots\ldots \quad \ldots\ldots \quad (5.14)$$
$$(-3.11) \quad (1.257)$$

$$\bar{R}^2 = .390 \qquad \text{D.W. } 1.612$$

$$\text{D.F.} = 12$$

The functional form of this equation is:

$$\dot{Y} = A_o FP^{\beta_1} e^{\beta_2 FG} e^u$$

The coefficient of private capital inflows is statistically significant but with a negative sign. This does not however mean that private capital inflows have negative effects on economic growth. Since the coefficient is an exponent, the effect would be positive but small. The

coefficient of public capital inflows is positive but it is not statistically significant. The $\bar{R}^2$ has improved but the D.W. is still low. We therefore conclude that there is no strong relationship between foreign capital inflows and economic growth.

In the analysis above, we have tested the effects of net foreign capital inflows on a number of macrovariables related to growth in the Kenyan economy. We feel that net capital inflows are more appropriate for the analysis than gross figures because they take into account what is available for investment in the country after capital repayments have been made abroad. The use of net figures assumes that receipts will always be greater than repayments so that the net figure is positive. This may not be the case always and the analysis may be affected if some of the net figures are negative. However, the best available data from the CBS are given on net basis (see Chapter Four). Using these data, we have found that foreign capital inflows stimulate domestic investment. Although this may contribute to growth, direct examination of the effects of foreign capital inflows on growth revealed them to be small or insignificant. The effects on trade were found to be favourable in the case of private capital inflows while in the case of public capital inflows they were not. Their effects on inflation

were negligible. These results tend to support some of the studies cited in Chapter Two but not all. This tends to suggest that the impact of foreign capital inflows depends on the conditions in a particular country, and this may be the main reason why studies from different countries have conflicting findings.

FOOTNOTES

1. For a description of the banking operations before and after 1966 in East Africa which may cause inconsistency, see Selsjord, M.: "Recent Developments in Commercial Banking in East Africa" Economics and Statistical Review, East African Statistical Department, Nairobi, No.20, September 1966, pp.viii-xxi. Also see Newlyn, W.T.: "Statistical Analysis of Integration in East African Banking System", Eonomics and Statistical Review, East African Statistical Department, Nairobi, No.21, December 1966, pp.viii-xxi.

2. To test for the presence of serial correlation, we compared the empirical D.W. with the Upper and Lower values of the D.W. obtained from the Durbin-Watson tables at the 5% level of significance. This test is available from any standard econometrics textbook; see for example Gujarati, D.: Basic Econometrics, McGraw-Hill, New York, 1978, pp.235-238.

3. If we want to investigate the determinants of Investment, foreign capital inflows become dependent variables because they form part of total investment. But as we argued in Chapter Three, foreign capital inflows can also affect domestic investment, for example through backwards and forwards linkages. This is what we are investigating here. In such a case the foreign capital inflows are independent variables and their effects are revealed by examining the sign and size of the coefficients.

4. See Kenya: Input-Output Tables for Kenya, 1976, Government Printer, Nairobi, 1979, Table No.5.

5. Langdon, S.: "Multinational Corporations, Taste Transfer and underdevelopment: a case study from Kenya", Review of African Political Economy, No.2, 1975. Also Langdon, S.: Multinational Corporations in the Political Economy of Kenya, Macmillan, London and Basingstoke, 1981.

6. In this equation we did not lose any degree of freedom by lagging because we added the 1981 figure for Capital Formation. However, in all the other equations where we have a lagged relationship, we lose one degree of freedom because we have considered the 1966-80 figures only.

7. Such a relationship was tested where future public capital inflows affect present domestic investment and the following equation was obtained:

$$I_t = 62.289 + 2.095FP_t + 2.404FG_{t+1}$$
$$(3.487) \quad (7.763)$$

$$\bar{R}^2 = .965 \qquad D.F. = 11$$

Including both present and future public capital inflows we obtained:

$$I_t = 70.291 + 1.784FP_t + .757FG_t + 1.972FG_{t+1}$$
$$(2.693) \quad (1.017) \quad (3.554)$$

$$\bar{R}^2 = .973 \qquad D.F. = 9$$

These results tend to support the argument.

8. For some discussion on the severity of multicollinearity when we have used dummy variables, see Maddala, G.S.: Econometrics, McGraw-Hill, Tokyo, 1981, pp.183-219.

CHAPTER SIX

CONCLUSIONS

In this study, we have stated two main objectives. One was to analyse the impact of foreign capital inflows on the Kenyan economy. And the other was to evaluate the accuracy and reliability of the available data which can be used in the analysis. Both objectives are equally important because the results of any empirical analysis largely depend on the nature of the data used. Given that the scarcity of reliable data is a major problem in developing countries, it was found necessary to examine the extent of this problem in the case of the Capital Account data in Kenya before any analysis could be undertaken.

Several sources of Capital Account data were identified. These are the Central Bureau of Statistics (CBS) of the Ministry of Finance and Planning, and the Central Bank of Kenya. From the Central Bank, we have data from the Investments Office, the Foreign Department, and from the returns by Commercial banks. We have also international sources such as the International Monetary Fund. We found that each of these data sources has its own limitations. The Central Bank data are the best where actual financial flows are concerned. However, these do not cover non financial capital flows such as

suppliers' credit and credit purchases. Also we found that the Central Bank data suffer from timing, classification and definitional problems. The data are partial because they do not include all the items of the Capital Account.

With the CBS data, we found that there was possible under-coverage especially with private capital inflows because the data are obtained by means of surveys and these may not cover the total population. However, the data are complete in that they cover all the items of the Capital Account. There are two versions of the data, one which is highly aggregated and another which is disaggregated. The disaggregated data series is however not long enough to enable statistical analysis. Judging from the limitations of each data source, we concluded that the aggregated CBS data were the best available which could be used in our analysis.

In the analysis, we tested the effects of foreign capital inflows on total investment, foreign trade, money supply and economic growth in Kenya. However, we could not perform a detailed analysis because the available data are highly aggregated. This obscures the effects of different types of capital inflows which may have

useful policy implications. Despite the limitations in the data, the available results tend to support the results of the previous partial studies.

We found that although foreign capital inflows stimulate domestic investment, the effects are not as great as expected. The effects were relatively greater with private capital inflows than with public capital inflows. We also found that private capital inflows have a positive effect on the country's balance of payments while the effects of public capital inflows are negative. However, the positive effects of private capital may be neutralised when we consider the investment income outflows associated with them. Both types of foreign capital inflows were found to have positive effects on the money supply but they did not greatly contribute to inflation.

Finally we found that private capital inflows have positive (though small) and statistically significant effects on economic growth. With public capital inflows the relationship was positive but statistically insignificant. This relationship was not however strong as was indicated by the low coefficient of multiple determination. From the available evidence we find that the effects of private capital inflows seem to be

different from those of public capital inflows.

From the findings of this study, we make the following conclusions:

(a) There are potential sources from which we can obtain all the data we need on the Capital Account. Currently, the data available from these sources (especially the Central Bank) are beset with many problems (timing, omissions, duplications, under-coverage classification etc.) such that they are not suitable for balance of payments analysis. The CBS data may however be used for analysis because their problems are less severe. They should however be taken into account when interpreting the results. Because of the limitations of each data source, none of them is adequate by itself. However, if administered properly each of the data sources has its own advantages as far as solving the data problem is concerned. Therefore, to get more accurate and reliable data, which is compiled in a manner useful for analytical purposes, all the sources need to be made use of. This will help in reducing the problems mentioned above.

The CBS stands to improve its system of data collection substantially by coordinating with the other sources. These other sources however need to design a sound system of data collection and compilation acceptable to the CBS. The main problem is not therefore data availability but their compilation in accordance with balance of payments requirements.

(b) Using the best available data, we have found that foreign capital inflows have not been very useful in promoting economic growth in the country. This should not however be attributed to foreign capital inflows per se A lot depends on how these capital inflows have been utilized and the policies designed to attract them. The World Bank made a similar remark when they noted that:

> "We have put forward the view that, although some of the past investments in Kenya have not really benefited the country, she will continue to need a steady flow of private investment, both to supply the capital and to provide entrepreneurial ability and technical know-how. The issue we see is not whether foreign investment is desirable; rather whether Kenya can continue to attract foreign private investment and whether she can learn to use foreign investment more effectively for the benefit of the country."[1]

The country's fifth development plan also seems to have recognized this fact. Regarding public external borrowing it states that:

> "Sound projects already underway, and those for which economic and financial feasibility has already been demonstrated, will be given first claim on externally borrowed resources. New projects approved for external funding must promise a rate of return in excess of the cost of capital, productive benefits that will be realised in the near term, a net contribution to foreign exchange receipts (or savings), and eligibility for external financing on concesionary terms."[2]

We therefore conclude that foreign capital inflows are still useful and should be encouraged so long as they are properly managed.

(c) Finally we have found that private capital inflows seem to have different effects from public capital inflows. This is expected to be the case even for other types of capital inflows when further disaggregations are made. But we have seen that a more detailed study is constrained by the lack of disaggregated data. Such a study needs to be done in the future when more data become available. Also, although we have obtained some useful results from the analysis, the data used were known to have

some limitations. We cannot therefore draw any firm policy implications from these results.

FOOTNOTES

1. World Bank: Kenya: Into the Second Decade, John Hopkins University Press, Baltimore and London, 1975, p.43.

2. Kenya: Development Plan, 1984-88, Government Printer, Nairobi, 1983. p.109.

BIBLIOGRAPHY

1. Areskoug, K.: External Public Borrowing: Its Role in Economic Development, Praeger Publishers, New York, 1969.

2. _____ "Foreign Capital Utilization and Economic Policies in Developing Countries", Review of Economics and Statistics, Vol.55, 1973, pp.182-189.

3. _____ "Private Foreign Investment and Capital Formation in Developing Countries", Economic Development and Cultural Change, Vol.24, April 1976, pp.539-547.

4. Arkadie, V.B. & Ndegwa, P.: "Future Trade Balance of Payments, and Aid Requirements in East Africa", Eastern Africa Economic Review, Vol.1, No.2, June 1965, pp.32-64.

5. Baldwin, R.E.: "Determinants of Trade and Foreign Investment", Review of Economics and Statistics, Vol.6, February 1979, pp.40-48.

6. Bhagwati, J.N. & Grinols, E.: "Foreign Capital, Dependence, Destabilization and Feasibility of Transition to Socialism", Journal of Development Economics, Vol.2, 1975, pp.85-98.

7. Byres, T.J.: Foreign Resources and Economic Development, Frank Cass, London, 1972.

8. Carter, A.G.T.: "The Balance of Payments of East Africa", Eastern Africa Economic Review, Vol.10, No.2, December 1963, pp.75-87.

9. Chenery, H.G.& Bruno, M.: "Development Alternatives in an Open Economy: The Case of Israel", Economic Journal, Vol.72, 1962, pp.79-103.

10. Chenery, H.B. & Strout, A.M.: "Foreign Assistance and Economic Development", American Economic Review, Vol.56, September 1966, pp.679-733.

11. Dacy, D.C.: "Foreign Aid, Government Consumption, Saving and Growth in Less Developed Countries", Economic Journal, Vol.85, September 1975, pp.548-561.

12. Evans, M.K. Macroeconomic Activity: Theory , Forecasting and Control, Harper & Row, New York, 1969.

13. Feldstein, M. & Hononoka, C.: "Domestic Savings and International Capital Flows", Economic Journal, Vol.90, June 1980, pp.314-329.

14. Frances Van Loo:"The Effects of Foreign Direct Investment in Canada", Review of Economics and Statistics, Vol.59, November 1977, pp.474-481.

15. Furness, E.L.: Money and Credit in Developing Africa, Waistable Litho, Waistable, Kent, 1975.

16. Goldsbrough, D.J.: "The Role of Foreign Direct Investment in The External Adjustment Process", IMF Staff Papers, Vol.26, December 1979, pp.725-754.

17. Griffin, K.B., & Enos, J.L.: "Foreign Assistance: Objectives and Consequences", Economic Development and Cultural Change, Vol.18, April 1970, pp.313-327.

18. Griffin, K.: "Foreign Capital Domestic Savings and Economic Development", Bulletin, Oxford University, Institute of Economics and Statistics, Vol.32, May 1970, pp.99-112.

19. Gujarati, D.: Basic Econometrics, MacGraw-Hill, New York, 1978.

20. Gupta, K.L.:"Foreign Capital and Domestic Savings: A test of Haavelmo's Hypothesis with Cross-Sectional Data: A Comment", Review of Economics and Statistics, Vol.52, 1970, pp.214-216.

21. Guth, W.: Capital Exports to Less Developed Countries, D. Reidel, Holland, 1963.

22. Hazlewood, A.: The Economy of Kenya: The Kenyatta Era, Oxford University Press, New York, 1979.

23. Hopcraft, P.: "Industrialization, Balance of Payments, and Trade Policy in Kenya: The Effects of Protectionism and Government Intervention on Prices, Exports and Income Distribution", (Mimeo).

24. Hughes, H.:"Debt and Development: The Role of Foreign Capital in Economic Growth", World Development, Vol.7, February 1979, pp.95-112.

25. IMF: "Balance of Payments: Its Meaning and Uses", Pamphlet Series, No.9, Washington, 1967.

26. _____ "Balance of Payments: Concepts and Definitions", Pamphlet Series, No.10, Washington, 1969.

27. _____ Balance of Payments Manual, 4th Edition, Washington, 1977.

28. _____ Financial Policy Workshops: The Case of Kenya, Washington, 1981.

29. _____ Balance of Payments Yearbook, Washington, Various Issues.

30. Islam, N.: Foreign Capital and Economic Development: Japan, India, and Canada, Charles E. Turtle, Tokyo, 1960.

31. Kaplinsky, R.: Readings on The Multinational Corporations in Kenya, Oxford University Press, Nairobi, 1978.

32. Kenya: Sources and Methods Used for National Accounts of Kenya, Government Printer, Nairobi, 1977.

33. _____ : Statistical Abstract, Government Printer, Nairobi, Various Issues.

34. _____ : Economic Survey, Government Printer, Nairobi, Various Issues.

35. _____ : Development Plan , 1974-78, 1979-83, and 1984-88, Government Printer, Nairobi.

36. Killick, T.: Policy Economics: A Textbook of Applied Economics on Developing Countries, Heineman, London, 1981.

37. _____ (Ed.): Papers on the Kenyan Economy: Performance Problems and Policies, Heineman, London, 1981.

38. King, J.R.: Stabilization Policy in An African Settin Kenya 1963-73, Heinemann, London, 1979.

39. Koutsoyianis, A.: The Theory of Econometrics, Macmi London & Basingstoke, 1981.

40. Langdon, S.: "Multinational Corporations, Taste Tra and Underdevelopment: a Case Study from Kenya" Review of African Political Economy, No.2, 197

41. _____ : Multinational Corporations in The Poli Economy of Kenya, Macmillan, London and Basing 1981.

42. Maddala, G.S.: Econometrics, 3rd Ed., McGraw-Hill, Tokyo, 1981.

43. Maizels, A. : Exports and Economic Growth of Developing Countries, Cambridge University Press, London, 1968.

44. Massell. F.B. et.al.: "Foreign Exchange and Economic Development: An Empirical Study of Selected Latin American Countries", Review of Economics and Statistics, Vol.54, 1972, pp.208-212.

45. McKinnon, R.I.(Ed.): Money and Finance in Economic Growth and Development, Marcel Dekker, New York, 1976.

46. Meir, G.M.: Leading Issues in Economic Development, Oxford University Press, New York, 1976.

47. Murray, G.L.: "Monetary Policy and Capital Inflows", Economic Records, Vol.54, August 1978, pp.271-280.

48. Newlyn, W.T.: "Statistical Analysis of Integration in East African Banking System", Economics and Statistical Review, East African Statistical Department, Nairobi, No.21, December 1966, pp.viii-xxi.

49. Nyambati, S.M.:"The Impact of Trade Instability on Economic Growth in Kenya",M.A. Thesis, University of Nairobi, 1980 (Unpublished).

50. Papaneck, F.G.: "The Effects of Aid and Other Resource Transfers on Savings and Growth in Less Developed Countries", Economic Journal, Vol.82, September 1972, pp.934-950.

51. _____ : "Aid, Foreign Private Investment, Savings and Growth in Less Developed Countries", Journal of Political Economy, January/February 1973, pp.120-130.

52. Paric, S.: "Is Foreign Capital an Engine For Development", Journal of Economic Development, Vol.2, July 1977, pp.109-130.

53. Polak, J.J.:"Monetary Analysis of Income and Imports and its Statistical Application", IMF Staff Papers, Vol.7, April 1960, pp.349-415.

54. Rahman, M.A.: "Foreign Capital and Domestic Savings: A test of Haavelmo's Hypothesis with Cross-Country Data", Review of Economics and Statistics, Vol.50, February 1968, pp.137-138.

55. Raymond, F.M. & James, E.Z. : "The Nature of the Savings Function in Developing Countries: A Survey of Theoretical and Empirical Literature", Journal of Economic Literature, March 1973, pp.1-27.

56. Reuber, G.L. et.al.: Private Foreign Investment in Development, Clarendon Press, Oxford, 1973.

57. Selsjord, M.: "Recent Developments in Commercial Banking in East Africa", Economics and Statistical Review, East African Statistical Department, Nairobi, No.20, September 1966, pp.vii-xxi.

58. Stoneman, C.: "Foreign Capital and Economic Growth", World Development, Vol.3, January 1975, pp.11-26.

59. Todaro, M.P.: Economic Development in the Third World, Longman, New York, 1981.

60. Unctad: Balance of Payments Effects of Private Foreign Investment: Case Studies of Jamaica and Kenya, Unctad, TD/B/C.3/79 Add.2.

60(a) Van Loo F. See No.14 above.

61. Voivodas, C.: "Exports, Foreign Capital Inflow and South Korean Growth", Economic Development and Cultural Change, Vol.22, pp.480-484.

62. Wai, U.T. & Wong, C.: "Determinants of Private Investment in Developing Countries", Journal of Development Studies, Vol.19, October 1982.

63. Wasow, B.: "Dependent Growth in a Capital Importing Economy: The Case of Puerto Rico", Oxford Economic Papers, Vol.30, March 1978, pp.117-129.

64. World Bank: Kenya: Into the Second Decade, John Hopkins University Press, Baltimore and London, 1975.

APPENDIX - THE DATA USED

YEAR	I	M	X	MX	B	Ẏ	PGDP	FP	FG
1966	61.2	128.4	134.8	-6.4	-	12.81	3.157	5.3	9.3
1967	71.5	129.5	125.5	4.0	-	5.23	1.194	9.6	3.2
1968	89.5	135.4	132.2	3.2	28.40	7.62	.594	9.3	7.1
1969	93.7	140.7	144.1	-3.4	42.71	6.19	2.131	15.3	7.4
1970	112.7	170.4	160.4	10.0	62.11	6.26	2.509	18.4	8.8
1971	144.2	212.9	171.2	41.7	63.87	4.80	4.835	18.8	-4.5
1972	163.8	216.2	200.1	16.1	64.38	7.12	12.779	13.0	15.9
1973	179.6	251.8	240.6	11.2	85.98	4.30	9.921	35.8	15.9
1974	202.8	433.8	357.2	76.6	82.01	2.53	17.527	52.6	16.7
1975	241.9	413.0	356.9	56.1	84.85	2.63	8.214	31.5	24.4
1976	290.4	461.6	471.7	-10.1	97.36	2.40	18.100	63.1	36.5
1977	390.0	587.6	650.2	-62.6	169.06	8.78	18.01	53.2	37.5
1978	514.0	793.0	593.1	199.9	179.40	6.67	2.194	61.1	94.5
1979	540.5	736.6	600.1	136.5	205.62	3.12	7.008	77.5	112.0
1980	600.3	1,051.0	734.8	316.2	238.18	4.01	10.153	61.7	147.7

SOURCE: All the variables except B, Ẏ and PGDP were obtained from various issues of the Economic Survey and the Statistical Abstract. B was obtained from the Central Bank of Kenya Research Department and PGDP from the Working Papers of the Fifth Development Plan. Ẏ is calculated from GDP figures at 1976 prices.

Definitions:

I = Total Investment (Total Gross Fixed Capital Formation at Current Prices).

M = Imports of Goods and Services at Current Prices.

X = Exports of Goods and Services at Current Prices.

B = Money Base (composed of Net Foreign Assets at the Central Bank, and Lending by the Central Bank to the Central Government, Other Public Sector, and to Commercial Banks.)

$\dot{Y}$ = Rate of growth of Real GDP (1976 prices).

PGDP = Percentage Changes in the GDP Deflator.

FP = Net Longterm Private Capital Inflows (Includes Private Companies and Government Enterprises).

FG = Net Longterm Public Capital Inflows (Includes Central Government and Local Government Transactions).

All the variables are in Millions of Kenya Pounds.