STUDIES IN THE THEORY AND PRACTICE OF IMF CONDITIONALITY AND DEVALUATION IN DEVELOPING COUNTRIES

BY

MOHEMMED NURELDIN HUSSAIN

A THESIS SUBMITTED FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY
IN THE UNIVERSITY OF KENT AT CANTERBURY

October 1983

University of Kent
at Canterbury

ACKNOWLEDGEMENTS

It would not have been possible to accomplish this study without the thoughtful guidance, assistance and encouragement of my supervisor Professor Anthony Thirlwall. It has been a pleasure to work under his supervision at both the professional and personal levels. From him I have learnt a great deal and to him I owe my many thanks, respect and gratitude.

Acknowledgements are also due to the assistanceof several staff members of the Economics Department, and in particular to Bill Smith, Alan Carruth, John Craven, David Metcalf and Richard Disney. My thanks also to several government officials who supplied me with necessary data and documents. Acknowledgements are also due to the assistance of Mr. Jack McDonald of the University of Indiana. I am particularly indebted to Ali Algader Ali and Meki Elshibly of the Department of Economics, University of Khartoum for valuable comments and suggestions. My appreciation is also extended to the University of Gezira for financing this study. I would also like to thank Di Mayes who coped adequately with typing the manuscript.

Last, but by no means least, my gratitude to my wife, Tunna, for her encouragement and support throughout my period of study at the University of Kent.

M. Nureldin Hussain
Keynes College
University of Kent
at Canterbury
Kent

CONTENTS

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

CONTENTS (Cont'd.)

LIST OF TABLES

TABLE NUMBERS Page

TABLES NUMBERS Page

LIST OF FIGURES

LIST OF FIGURES (Cont'd.)

ABSTRACT

The International Monetary Fund imposes conditions on the use of its credit facilities. The IMF conditions are economic policies which the borrowing country must undertake to qualify for the use of its resources. The Fund claims that such policies would restore internal and external equilibrium and promote economic development. An alternative view suggests that the IMF conditions would create a "liberalized" foreign exchange and trade system which is wholly dependent on the continuous flow of foreign aid.

To achieve its claimed objectives, the IMF imposes devaluation supported by anti-inflationary policies and liberalization of trade. In correcting payment deficits the IMF devaluation model attaches great importance to the mechanisms of relative prices, income distribution, and real money balances. The corrective mechanism of devaluation, in the context of the IMF devaluation model, will be impaired if inflation accelerates in the devaluing countries.

Serious doubt is cast on the appropriateness of the IMF diagnosis of Balance of Payments disequilibria and the effectiveness of its policy prescriptions. The IMF diagnosis does not attempt to distinguish the underlying causes of payments deficit from their effects, and its policy prescriptions are not suitable for developing economies. Owing to its adverse effect on the terms of trade, and the low price and income elasticities of demand for imports, devaluation would not be successful in improving the balance of payments.

Recently the IMF has adopted what is called a supply-side approach to exchange rate determination. The coefficient of competitiveness is measured as the ratio of foreign exchange earnings per unit of domestic resource used in the export sector. Export supply is regarded as "unprofitable" if the coefficient of competitiveness is lower than the prevailing exchange rate. Devaluation is justified to make activities profitable in this sense. Owing to the inflationary repercussions of devaluation, and the low export supply elasticity, serious doubt is cast on the relevance of the supply side approach in developing countries.

INTRODUCTION

Owing to historical, political, and economic circumstances the developing countries, among the other nations of the World, are the most to suffer from foreign payments problems. The emergence of the oil crisis, and the inflation spiral that followed it, together with a very weak growth of export earnings, combined with the need to import essential consumer goods, have resulted in a chronic balance of payments deficit in these countries. It is when a country is facing payment difficulties that the service of the International Monetary Fund is called in. The IMF lays down conditions for using any of its credit facilities. The aim of this study is to examine the Fund's policy of conditionality and its effect on developing countries with emphasis on the effects of currency devaluation.

Scope of Analysis

In its early years the IMF was weak and inactive. The only role it played was the recycling of the United States surpluses to Western European nations. In those early years the use of the IMF resources was not subject to any type of conditional policies. In its present operations drawings on the Fund's credit facilities are conditional. Conditionality as defined by the Fund refers to the policies that the IMF imposes on member countries seeking the use of its resources. Chapter One traces the evolution of the IMF

conditionality and examines its nature. The first part of this Chapter investigates the economic and political developments that led to the emergence of the Fund's policy of conditionality. The second part examines the IMF policy model and traces the evolution of the IMF views with regard to the diagnosis of payments disequilibria and policy prescriptions. This part ends by analysing the objectives of the IMF programmes. The discussion centers around two main views: the programme objectives as viewed by the IMF and the claims of what we called the Alternative View.

The main plank of the IMF Policy Prescriptions to achieve programme objectives is devaluation supported by anti-inflationary policies. The IMF, however, does not offer any concrete theoretical model which explains its devaluation philosophy. The tasks which the Fund assigns to currency devaluation are not only numerous, but have changed over time too. After discussing the different routes through which devaluation operates to correct payment disequilibria, Chapter Two attempts to develop a model that represents the IMF's present devaluation philosophy.

Chapter Three provides empirical analysis of the probable effects of devaluation on domestic prices and real wages using a two-equation wage-price model. After discussing the theoretical model, the Chapter estimates the model for a sample of twelve developing countries that devalued their national currencies during the last twenty years.

The aim of Chapter Four is to empirically examine the effects of devaluation on the trade balance and the balance of payments on current account. Starting with traditional demand functions for exports and imports, the Chapter develops a simple demand-side model which explains the behaviour of the payments balance. The model is then estimated for the sample of twelve developing countries. Using the coefficients of the estimated equations a "what-would-have-been" test is used to assess the effectiveness of devaluation. The final part of this Chapter compares the results of this test with those of a simple "before-and-after" test.

One of the advantages of conducting the empirical analysis using a sample of developing countries is that it provides an overall view of the effectiveness of currency devaluation in developing countries. But such analysis ignores the different circumstances of the individual countries and it overlooks important conditionality issues which cannot be clarified by simply testing statistical aggregates. The effects of the IMF conditionality and devaluation are properly understood by close case studies of individual countries. The individual experiences of three developing countries (the Sudan, Jamaica and Zaire) with the IMF are examined.

Starting with the Sudanese case, Chapter Five analyses the Sudanese planning experience and its relation to the foreign exchange crisis in 1978. The Chapter also provides an account of the "devaluation debate" between Sudanese and IMF officials. This paves the ground for the empirical analysis of the IMF economics in the Sudan, which is the subject matter of Chapter Six. Chapter Six concentrates on the analysis of the IMF new supply-side economics

and its application to the Sudan. An empirical value-added model is developed and tested to investigate the relevance of this supply-side framework. The Chapter also develops and tests a supply-side balance of payments model.

Chapters Seven and Eight examine the experiences of Jamaica and Zaire with the IMF. For each country the Chapters provide detailed analysis of the immediate factors that caused the foreign exchange crisis, and hence the need for the IMF conditional assistance. The Chapters analyse the Fund's policy diagnosis, policy prescriptions and policy targets. They investigate the degree to which these targets were achieved (vis-a-vis the norm set by the IMF) and the effects consequent upon the implementation of the IMF programme.

Chapter Nine concentrates on the application of the value-added model and the supply-side balance of payments model (developed in Chapter Six) to the economies of Jamaica and Zaire.

The study ends by drawing some conclusions regarding the appropriateness of the IMF stabilization programmes in developing countries, their achievements, and their effect. Conclusions are also drawn with regard to the nature of the role which the IMF plays in the International economy.

CHAPTER ONE

THE EVOLUTION OF THE INTERNATIONAL MONETARY FUND AND THE SYSTEM OF CONDITIONALITY

Towards Bretton Woods

During the late Nineteenth and early Twentieth Century, international transactions were regulated by the gold standard under which each country defined its monetary unit in terms of a specific quantity of gold. Under the gold standard balance of payments disequilibria were corrected by what David Hume (1711-76) called the gold-specie-flow mechanism. That is, a country with balance of payments deficit would lose gold, and as domestic money supply was based on gold holdings, balance of payments deficits would cause the domestic money supply to fall, depress prices, and hence correct the deficit by increasing exports as the country's competitiveness improved.

In 1931 the gold standard was abandoned. Among the immediate factors which led to this were the great depression; the rising political tension between European countries; the growing weakness of the powerful Austrian Credit-Anstalt Bank; and the break-down of confidence that followed it. Yet more fundamental was the rejection by the UK of the domestic depression and unemployment inherent in the adjustment mechanism of the gold standard.

The years following the collapse of the International Monetary Order witnessed the widespread use of competitve devaluations, exchange controls, and trade restrictions as countries attempted to protect their domestic markets and encourage their exports. Among all other countries, the United States of America, which was then emergingas a great economic power, was strongly affected by these actions. American exports were drastically reduced by the rival devaluations and exchange and import restrictions.

PART ONE

The IMF and the Evolution of Conditionality

The Second World War provided the major economic powers of Britain and the United States with the opportunity to plan and discuss the type of international monetary order that would be appropriate for the peace time and avoid the undesirable features of the 1930's. The official British view was presented by Keynes who advocated the establishment of a Clearing Union which would be responsible for creating and managing a new form of international money. The Clearing Union, as planned by Keynes, was to give member countries automatic access to the Union's resources. The American views which were presented by Dr. White called for the establishment of an international stabilization fund of gold and national currencies, the access to which was to be contingent on a number of conditions.

The two plans received a full-scale discussion in Washington in 1943. The outcome of these discussions was that the American plan was to form the basis of the new International Monetary System, but would be modified so as to reflect some of the British views. Therefore, the United States, which was the largest economic power in the immediate post-war period, had the upper hand in establishing the International Monetary System and designing it to suit American interests which were identified with a world economy open to their trade and investments.

The philosophy of the Bretton Woods System was thus based on the hostility to the competitive devaluations and the trade and exchange restrictions of the 1930's. This hostility was reflected in the Bretton Woods Articles of Agreement. Article VIII stated that:

> *"No member may without the approval of the Fund, impose restrictions on making payments or transfers for current international transactions or engage in discriminatory currency arrangement or multiple currency practices".*

While Article IV.5(a) provided that:

> *"Member countries are forbidden to change their par values except to correct a fundamental disequilibrium".*

The Bretton Woods system was intended to provide a compromise between the desire to stabilize exchange rates so as to avoid competitive devaluation, and the desire to avoid forcing countries to return to the gold standard, under which defence of the exchange rate overrides the pursuit of domestic full-employment policies.

The Bretton Woods designers recognized the fact that the new International Monetary System would not come into operation unless the economies of Europe recovered from the destruction of the Second World War. To facilitate the post-war recovery the International

Bank for Reconstruction and Development was created. The initial purpose of the IBRD (or The World Bank) was to make loans of its own funds so as to speed the post-war recovery. The priorities of the World Bank were obvious - no attention was given to the development of the poor countries while all the attention was given to the reconstruction of the industrial countries.

In fact the whole system which was fashioned at Bretton Woods, to be managed by the IMF and the IBRD, was essentially designed to deal with the problems of the industrialized countires. The views of the poor countries were hardly heard. The Latin American countries (except Argentina) were present, but the whole of Africa and Asia were represented by only seven countries which, apart from China, were all in one way or another under US or British control[†]. The rest of Africa and Asia were represented by proxy; i.e. by their colonial powers.

Quotas and the Power Structure in the IMF

According to the Fund's Articles of Agreement each country was to subscribe a specific amount of money to the Fund (equal to the

---

[†] These countries were Egypt, Ethiopia, Liberia, India, Iran, Iraq and The Philippines. Egypt and Iraq were under British control; Ethiopia had not recovered from the Italian occupation; Iranian territory was occupied by British and Soviet troops; India was under British colonial rule; The Philippines were largely occupied by Japan while Liberia had close ties with the United States.

country's quota) 25% of which was to be made in gold and the rest in national currency. The country quotas play an important role in the functioning of the IMF. In addition to voting power, they determine the borrowing power of members and the allocations of Special Drawing Rights (SDRS) among member countries. The distribution of quotas in the Fund is thus the determinant of its power structure.

At present (early 1983) the Fund's total quotas amount to SDR 90 billion. Within this total the United States has the largest quota amounting to SDR 17.9 billion[†]. Other quotas (other than that of the US) in excess of two billion SDRS in descending order are those of: UK 6.2; Federal Republic of Germany 5.4; France 4.5; Japan 4.2; Canada 2.94; Italy 2.9; China 2.4; Netherlands 2.26; India 2.21; and Belgium 2.08[††].

The link between quotas and voting power is established by the fact that each member country is allocated 250 basic votes plus one vote for each SDR 0.1 million of its quota. This in effect means that countries with the largest quotas also have the largest voting power. The US alone has 179,433 votes.

Furthermore, voting power and decision taking are linked with the IMF majority rule, which requires an 85% voting majority for certain types of decisions[‡]. The 85% rule applies to key elements

---

† Based on the 1983 proposed increases in quota, IMF Survey, April 4, 1983.

†† *Ibid.*, pp.106-107.

‡ Certain IMF Articles of Agreement can only be changed with the agreement of all members. These concern the unqualified right to withdraw from the Fund and the provision that no change can be made in the par value of member's currency without the consent of the country.

of the IMF operation such as a change in quotas, exchange arrangements, extension of IMF credit facilities, increase in the number of Executive Directors, use of gold,and the allocations of SDR's.

It is clear that the 85% majority rule enables the US on its own to veto any decision requiring this majority. At present the US total voting power is just under 20% of the total voting power. In the Bretton Woods scheme of quotas the US was allocated 31% of the total. At that time the majority requirement was 80%. As the Fund grew and the US percentage voting power declined the majority rule was increased to the 85% level allowing the US to maintain its supreme veto position. This blocking majority can also be made up by a group of countries acting in harmony. For example, the EEC members voting power which adds up to about 19% can also block a decision requiring the 85% majority.

Moreover, quotas play a crucial role in the distribution of power within the organs responsible for conducting the IMF business. The present permanent organs of the IMF are the Board of Governors, the Executive Board,and the Managing Director and his staff.

The Board of Governors (composed of Ministers of Finance or Governors of the Central Banks of members countries) is formally the highest authority of the IMF. In practice it is the Executive Board that runs the Fund. In addition to the powers delegated to it by the Board of Governors, the Executive Board has some powers obtained directly from the Fund's Articles of Agreement, namely the responsibility of selecting the Managing Director.

Normally the Executive Board is composed of 20 Executive Directors plus a Chairman. Five Executive Directors are appointed by the five member countries with the largest quotas, (US, UK, Germany, France

and Japan) while fifteen are elected for two-year terms by the remaining 131 member countries. The two countries whose currency has been most drawn from the Fund have the right to appoint a director if they are not already among the "big five" countries mentioned above.

Voting in the Executive Board is based not on a one-director-one-vote method, but rather on the voting power each director carries with him. That is, each of the Executive Directors casts the votes of the country or the group of countries which appointed (or elected) him. This means that the voting power of the Executive Directors appointed by the "big five" have a collective voting power of about 41% of the total vote in the Executive Board. While decisions in the Executive Board require a majority of Executive Directors having not less than 50% of the total voting power.

In practice, voting strength is a less important factor. Formal votes are usually avoided in the Executive Board, yet everyone concerned has a good idea of each Director's voting power which reflects the weight attached to his point of view. In most cases Executive Board decisions are prepared before the meeting, and in this process the Managing Director and the US Executive Director wield great influence. Neddless to say, the Fund's Managing Director is by agreement and tradition always a West European and his Deputy has been an American since the post was created in 1949.

Automaticity or Conditionality: The Atlantic City Debate

The debate about whether drawings on the Fund's resources were to be automatic or conditional is in fact as old as the IMF itself. This debate emerged at the pre-Bretton Woods Agenda Conference held in Atlantic City at the end of June 1944 in which seven countries participated. Regarding the automaticity/conditionality issue, two views were raised at this Conference - the first was the view that the Fund should not have the right to discipline a country's drawings on Fund facilities within the relevant quantitative limits. This view was represented by Europe, under the leadership of Britain which strongly believed that deficit countries should not be disciplined or made to introduce any form of deflationary measures having the effect of causing unemployment†. This was opposed by the US which argued for a Fund with wide discretionary and policing powers regarding the use of its resources.

The European and the American views were reflected in a disagreement regarding the wording of what later became Article V of the original Fund Agreement††. Two different texts of Article V were proposed. The European Nations favoured the following text:

---

† For a good account of the British view point see, Moggridge, Donald, (ed.) (1980), The Collected Writings of John Maynard Keynes, vols. 25 and 26 (Royal Economic Society, published in the US and Canada by Cambridge University Press, elsewhere by MacMillan).

†† For an account of this debate, see Dell, Sidney (1981), "On Being Grandmotherly: The Evolution of IMF Conditionality", Essays in International Finance, No.144, Princeton University, October.

> *"A member shall be entitled to buy another members' currency from the Fund in exchange for its own currency on the following conditions:*
>
> *a) The member represents that the currency demanded is presently needed for making payments in that currency which are consistent with the purpose of the fund" (emphasis supplied).*

The US proposed a different text to replace the one above:

> *"A member country may buy the currency of another member country from the Fund in exchange for its own currency subject to the following conditions:*
>
> *1) The member country initiating the purchase needs the currency requested for making payments in that currency which are consistent with the purpose and policies of the Fund"(Emphasis supplied).*

When the text proposed by the Americans was raised for discussion it was rejected by Keynes who argued vigorously the cause of European nations which were bound, at least in the short-run, to be debtors in the Fund. He argued that the text proposed by the Americans was unclear about whether it was the Fund or the member country that would decide whether drawings on the Fund's resources were consistent with the purpose and the policies of the Fund. He stated that countries must have an unqualified right to draw from the resources of the Fund within the prescribed quantitative limits stated in the Fund's Agreements[†]. He therefore advocated the text proposed by the European nations, which made it clear that it is the country and not the Fund that would make drawing decisions.

[†] *Ibid.*, p.3.

The US replied that the text proposed by the European nations did not provide sufficient protection against the misuse of the Fund's resources. It was added that the Fund must be in a position to question a country's drawings. However, the proposal of the US was dropped and the text advocated by the European nations was accepted. The inclusion of the two words "entitled" and "presents" in Article V was considered by many countries as a victory for the British views regarding the automaticity of drawing on the IMF resources.

In the light of the conflict of views in Atlantic City regarding the automaticity/conditionality question, it might have been expected that the subject would cause further controversy at the Bretton Woods conference. Yet, there was a complete silence regarding this issue and the question of conditionality was not debated. Hence, most countries ratified the Bretton Woods agreement believing that the British automaticity views had prevailed and that the Fund would have no right to challenge a country's drawing from the Fund to effect payments consistent with the Agreements.

The Era of the US Unilateral Management

The US was fully aware that the conditionality battle had not been won at Bretton Woods. Once the Fund began operations, its Executive Board might be persuaded to introduce the regulations (or the interpretations) necessary to give the Fund sufficient disciplinary powers. At the Fund's Annual Meeting in May 1946 the US Executive Director conceded that the Fund's Articles of Agreement did not specifically authorize the Fund to exercise supervision. Yet, he

argued that there would have to be some check system on the right of a country to draw. The check system he proposed was that an application to draw from the Fund's resources in excess of a ceiling figure should come before the Executive Board for comment and decision[†].

However, Canada refused this proposal arguing that the Fund could not operate if any transaction were to be considered as an application to the Board. In the event this check system was dropped. In a statement to the Executive Board in 1946, the Managing Director, Camille Gutt, asserted that the IMF could be considered as a sort of automatic machine selling foreign exchange to members within certain limits and on certain terms.

At the 1947 Annual Meeting the question of conditionality received some discussion and the outcome was again a victory for Europe's point of view. The Treasury brief for Britain's delegation attending the meetings suggested that the *"battle for automaticity may be largely regarded as won"*[††]. Thus, as late as 1947 member countries were assured that drawings on the IMF facilities were automatic within the quantitative limits stated in the Articles of Agreement.

The Europeans under the leadership of Britain may have won the automaticity-conditionality intellectual debate. In reality it was the United States and not the newly established International Monetary Fund that had the economic power. The modest credit facilities of the

---

[†] Telegram from Balfour to Foreign Office, May 1948, U.K., Public Record Office Treasury File 236/1162. Also cited in Dell (1981) *op. cit.*,

[††] *Ibid.*

Fund and the World Bank were far from sufficient to deal with the huge funds needed to facilitate the recovery of Europe and to finance its huge external deficits. The Second World War had destroyed the European economic system which was based largely on international trade. The sources of their foreign exchange earnings were wiped out and their overseas earnings were turned into debts. Western Europe was faced with vast amounts of imports needed not only for reconstruction but also for mere survival.

In 1946 the total European balance of payments deficit with other countries amounted to US $ 5.8 billion which increased to US $ 7.6 billion in 1947. In the same year both the IMF and the World Bank admitted that they could not cope with Europe's economic problems[†] . This gave the US the opportunity to step in and fill the gap which was left by the Bretton Woods System. Here a new International Monetary System based on the US unilateral management was born.

The emergence of the new system was facilitated by the shortage of International Liquidity (the very thing which would not have happened had the Keynes plan been adopted). The Bretton Woods System which was based on the American Plan made no provision for the creation of international reserves since the production of new gold and national currencies were assumed to be sufficient[††]. In 1947 the production of new gold was inadequate to meet Europe's growing needs

---

[†] Edward S. Mason, and Robert E. Asher (1973) The World Bank Since Bretton Woods (Washington D.C., The Brooking Institution) pp.11-36.

[††] For a discussion of the problems of the IMF and its reforms, see Williamson, J. (1977) The Failure of the World Monetary Reform (1971-74). Thomas Nelson). See also Solomon, Robert (1983) The International Monetary System 1945-1981 (Harper and Row, New York).

for reconstruction investment and international trade. Furthermore, the British pound was weak because of the general weakness of the British economy. The only currency which was strong enough to be used as a medium of international exchange was the American dollar.

But the strength of the American dollar alone would not solve the international liquidity problem. To increase international liquidity the American dollar had to flow out of the US so as to be available for international use. During the period 1947-58, the US was providing the World with international liquidity by running balance of payments deficits. The American dollar left the US by means of different aid programmes. From 1948 to 1952 the US gave West European countries US $ 17 billion in aid funds. The dollar outflow, besides providing the World with the necessary liquidity, also enabled the US to finance enormous direct and portfolio investment abroad on the part of US corporations which enabled them to acquire large sections of productive capacity of Western Europe and in developing countries. The dollar outflow also boosted US exports and contributed to the maintenance of US trade surplus.

During these early years of the US unilateral management,the Fund was weak and inactive. In 1950, for example, no drawings were made on its resources. This was mainly due to the fact that Europe became totally dependent on American aid programmes and the recipients of this aid were not allowed access to the IMF's resources[†]. And since Europe's acute need for recovery funds were largely satisfied by the US

[†] Horsefield, J. Keith (ed.) (1969) The International Monetary Fund 1945-1965, Vol.I (Washington, International Monetary Fund), p.276.

and not by the IMF, the automaticity-conditionality issue became of no practical importance and Europe gradually gave way to the American views on the question of conditionality.

In November 1950 the IMF Managing Director proposed a scheme of conditionality in which drawings were to be linked to an engagement by members to take specific steps to overcome balance of payments difficulties. This was first challenged by European nations and other members in the Executive Board. In the end, only Britain and France withheld their approval to this scheme[†]. Also a proposal by the US to establish a maximum period of five years for the repayments of drawings became operative despite initial opposition on legal as well as policy grounds by most members of the Executive Board.

In 1952 the Executive Board agreed on the first stand-by arrangement which enabled the Fund to decide on each country's case whether it would make its resources available to finance a country's balance of payments deficit[††]. Two stages in the evolution of the stand-by arrangement may be noted. In 1956, phasing was introduced. In other words, drawings were to be made in installments over a period of time; each installment approved in the light of a satisfactory performance of the drawing country. In 1958 binding performance criteria were introduced for the first time. In that year a drawing by Paraguay was made conditional on the observance of a credit ceiling and of maximum levels for budget expenditure and public work programmes[‡].

[†] *Ibid.* Vol.2, pp.399-400.

[††] See Gold, Joseph (1979) Conditionality, IMF Phamphlet Series No.31 (Washington).

[‡] Dell (1981) *op. cit.*, p.9.

When the Paraguay stand-by arrangement was reviewed in the Executive Board, the Executive Director for Britain asked that the performance conditions required of Paraguay on this occasion should not be treated as a precedent for general application[†]. In 1959 Haiti was forced to observe a broader range of policy criteria and this time several Executive Directors gave their blessing to the IMF conditions.

Here it must be noted that the move towards tougher conditionality, which was marked by the introduction of phasing and performance criteria, was made at a time when Western European nations were on their way to full economic recovery from the destruction of the War. In the late 1940's and early 1950's Europe, which was in severe foreign exchange crisis, vigorously rejected the US conditionality views. In the late 1950's, and thanks to the American aid, the productive and export capacity of Europe was rebuilt, and Europe was in no desperate need for IMF credit. This paved the way for more severe IMF conditionality.

The Era of the Multilateral Management under the Leadership of the US

During the US unilateral management of the International Monetary System the economies of Europe and Japan recovered. The American economy boomed due to the outflow of dollars which led to the purchase of American goods. However by the end of 1959 the American managed

---

[†] *Ibid.* p.9.

System faced serious difficulties. The System, which was based on the World's confidence in the US dollar; the commitment of the US to convert dollars into gold; and on increasing International Liquidity by widening the US balance of payments deficit; carried its own seeds of destruction. If the US balance of payments continued, and the amount of dollars held by other countries became large relative to US gold holdings, confidence in the US dollar would be lost and the whole system would be endangered[†].

During the period 1948-1959 American gold holdings had fallen by 20% from US $ 24.4 billion to US $ 19.5 billion. At the same time dollars held by other countries had increased by 166% from 7.3 billion to 19.4 billion. In 1960 for the first time, foreign holdings of dollars exceeded the US gold reserves. And in the same year the US experienced a run on the dollar as speculators began to convert dollars into gold on the London market. The Western World was faced with Triffin's Dilemma in which either a growing liquidity shortage (by reducing US balance of payments deficit) would stifle the growth of trade and incomes or the system would collapse from excessive dollar deficits[††]. To be sure the system did not collapse entirely the American economy, and hence the dollar remained strong. Yet the US was forced to share its control over the International Monetary System with the emerging economic powers of Europe and Japan. A new system managed by West European countries under the leadership of the US was born.

[†] See Triffin, R. (1960) Gold and the Dollar Crisis, New Haven, Conn., (Yale University Press).

[††] *Ibid.*

The new system was managed by means of influential groupings outside the IMF. An example of this is the group of European bankers which since the 1930's had regularly met in Basle, Switzerland. The US joined this group after the 1960 dollar crisis. The participation of the US gave this group the power to control important aspects of the International Monetary System. One of the most essential functions played by this group during the 1960's was the protection of the national currencies of its members.

A second example is the Group of Ten which was created as a result of the efforts to supplement the IMF with funds sufficient to deal with currency crises which might be caused by a run on the dollar. The potential IMF creditors were the countries of Europe which were willing to contribute to this scheme (which came to be known as the GAB, the General Agreement to Borrow) under the condition that the money involved should be under their control. Thus, the Group of Ten composed of the Finance Ministers of Germany, The U.K., Belgium, Italy, France, Canada, Sweden, Japan, Netherlands and the US, was formed in 1961 with the purpose of creating a Fund beyond the control of the IMF, and under the control of its members. The Group of Ten also promised to lend to the Fund when necessary subject to the approval of its members. However, the European members of the Group of Ten made it clear that they were not prepared to lend passively to the Fund, and they insisted on procedures under which they, as Lenders, should have the opportunity to consult and make discussions among themselves upon receiving a proposal from the Managing Director of the IMF[†].

[†] Solomon, (1983) *op. cit.*, p.43.

The creation of the Group of Ten gave the rich nations of Europe the power to share with the US control over the international monetary system. This enabled the group to act as a vehicle for reforming the IMF in accordance with the economic interests of Western Europe and the US. It became a customary practice that decisions to reform the IMF were made by the Group of Ten, which were later on ratified by the Fund.

By the mid-1960's the countries of Europe and Japan became not only international economic powers in their own right, but also major competitors of the US. For these developed countries higher levels of trade and growth would be possible by further expansion of their export markets. The developing countries were the possible candidates for this expansion.

By joining the IMF after acquiring independence, most developing countries acceded to an agreement which they had not negotiated. In their attempt to nurse their scarce foreign exchange holdings, these countries had to use multiple exchange rates, import controls, and other trade restrictions. Recognizing this fact, the IMF used these countries' requests to draw on the Fund's resources as an excuse to force these countries to open their domestic markets to the exports of the developed countries. In doing so, however, the IMF was simply applying its fundamental principles of trade and exchange liberalization as stated in its Articles of Agreement[†].

[†] Payer, C. (1974) The Debt Trap: The International Monetary Fund and the Third World (Monthly Review Press, New York, London) p.25.

The Articulation of Conditionality

The foundation of conditionality was laid down during the American unilateral management. It was during the years of the multilateral management that the principles of conditionality were articulated. This was done through two parallel routes. The first was the classification of the IMF credit facilities and the second was the creation of specific conditions or policies to accompany each credit facility. To trace these developments it is helpful to describe the mechanism through which members can borrow from the Fund[†].

As it was noted before, each country was to subscribe a specific amount of money to the Fund (the country's quota), 25% of which was to be made in gold and the rest in national currency. When a member draws from the IMF it uses its own currency to purchase the currencies of other member countries. Thus drawings from the IMF result in an increase in the Fund's holdings of the purchasing member's currency and a corresponding decrease in the Fund's holdings of the currencies that are sold. If the Fund's holdings of a member's currency is less than its quota, the difference is called the gold tranche (or reserve tranche after the Second Amendment)[††]. Purchases beyond the gold tranche were classified into four amounts, each one equal to 25% of the members quota. This is what came to be known as credit tranches[‡].

[†] Technically, drawings from the Fund are not loans, but purchases. Practically they are the same as loans.

[††] For the different IMF facilities see Gold (1979) *op. cit.*

[‡] Within a prescribed time a member must reverse the transactions by buying back its own currency with currencies specified by the Fund. A member's indebtedness to the Fund (i.e., the obligation to repurchase) begins when the Fund's holding of its currency exceeds 100% of the member's quota.

In the original Articles of Agreement, there was no distinction between the credit tranches as described above. By the end of the American-managed International Monetary System, the Fund began to distinguish between the different credit tranches. In 1959 the Fund's policies regarding the use of its credit facilities can be described as follows:

> *"The Fund's attitude to requests for transactions within the first credit tranche ... is liberal, provided that the member itself is also making reasonable efforts to solve its problems. Requests for transactions beyond these limits require substantial justification. They are likely to be favourably received when drawings or stand-bys are intended to support a sound programme aimed at establishing or maintaining the enduring stability of the member at a realistic rate of exchange"*[†].

The above statement prescribed mild standards for the first credit tranche and more severe standards for higher tranches. Yet it neither distinguished among tranches beyond the first credit tranche nor indicated the type of policies and conditions that a member should abide by in order to meet the criteria for the credit tranches.

The term conditionality which does not appear in any of the Fund's Articles of Agreement (including the First and the Second Amendments) emerged as a result of the Group of Ten distinction between conditional and unconditional liquidity. However, the term was picked up by the IMF and began to appear in its official publications. The 1964 Annual Report stated that

> *"... drawings beyond the gold tranche are conditional in greater or lesser degree on the adoption by the drawing countries of policies designed to ensure the temporary character of their payments problem and designed also to eliminate or reduce the member's reliance on exchange restrictions or certain other exchange practices"*[††].

[†] IMF Annual Report, 1959, p.22.

[††] *Ibid.*, 1964, p.34.

In 1962 the Fund introduced what was called the Compensatory Financing Facility (CFF) which was designed to enable a member to borrow from the Fund a maximum amount of 100% of its quota to meet payment difficulties caused by shortfalls in export earnings[†]. In 1966 the Fund decided to "float" this facility alongside the gold tranche. This meant that drawings on the Compensatory Facility would have no effect on the credit tranches. For example, if the Fund's holdings of a member's currency is 75% of quota, and the member made a drawing under the Compensatory Facility equivalent to 25% of quota, this in the absence of "floating" meant that the member exhausted its privileges, not only under the Compensatory Facility, but also under the gold tranche, as the Fund's holdings of the members currency would rise to 100% of quota. Under "floating" the member retains its gold tranche.

The 1966 "floating" decision was considered by many developing countries, which looked to the Fund for credit, as a step towards introducing other facilities that "float" alongside the gold tranche and hence carry mild conditionality. Yet their hopes were in vain. Article XIX(j) of the First Amendment which came into force in 1969 emphasized conditionality by providing that policies other than the CFF cannot float alongside the gold tranche. This decision was tantamount to saying that any new facility the Fund introduces in the future should float alongside the credit tranches and hence be subject

---

[†] For the conditionality attached to this facility, see the section on the IMF credit facilities.

to conditionality. The credit facilities which the Fund introduced in this way were the Buffer Stock Financing Facility (1969) the Oil Facility (1974), the Extended Arrangement (1974) and the Supplementary Facility (1977).

The First Amendment also took the step of introducing into the Articles for the first time clear statements that the Fund can impose policies on the countries seeking the use of its credit facilities. It also made it clear that with the exception of the gold tranche the use of the Fund credit facilities was to be subject to conditionality. Article V Section 3(c) and (d) were the provisions that brought about this emphasis on conditionality.

Section 3(c) says:

> *"A member's use of the resources of the Fund shall be in accordance with the purpose of the Fund. The Fund shall adopt policies on the use of its resources that will assist members to solve their balance of payments problems, in a manner consistent with the purpose of the Fund, and that will establish adequate safeguards for the temporary use of its resources".*

Section 3(d) says:

> *"A representation by a member under (a) above shall be examined by the Fund to determine whether the proposed purchases would be consistent with the provision of this Agreement and with the policies adopted under them, with the exception that proposed gold tranche purchases shall not be subject to challenge".*

More emphasis on conditionality brought by the First Amendment was to deny the Fund the authority to create new unconditional credit facilities. The Executive Board report of April 1968 on the proposed First Amendment stated that

> *"... the Fund will not have the power to create any new facilities in the General Account for the unconditional use of its resources".*

It followed that the Fund would no longer be able to permit uses of its resources of the kind that had been associated with payments of subscriptions or increases in quota. Moreover, it was decided that any need for additions to existing International Liquidity would be met, as and when it arises, through allocations of Special Drawing Rights.

The so-called Special Drawing Account was established in July 1969 following four years of negotiations among the Group of Ten and the US to create a new means of creating international reserves. An agreement was reached in 1967 to create the SDR's and this was ratified by the IMF.

The SDR's which were made the sole source of unconditional liquidity were allocated according to member's quotas and not, for example, according to relative costs of balance of payments adjustments which would have favoured developing countries. This, in effect, meant that 75% of the new international money created through SDR's was to be distributed to the World's richest countries, while the poorest countries were to receive only 25%[†].

The International Monetary System During the 1970's

During the late 1960's and early 1970's there was growing monetary interdependence among the major Western economic powers. This was mainly due to the growing international structure of production characterized by the expansion of multinational corporations. These multinational corporations, controlling vast liquid assets, made possible the movement of vast sums of money from one country to another to take

---

[†] See, Thirlwall, A. P. (1978) Growth and Development with Special Reference to Developing Countries (MacMillan).

advantage of interest rate differentials or expected exchange rate adjustments. Other sources of monetary interdependence were the internationalization of commercial banks and the creation of the market for Eurocurrencies, which is a form of uncontrolled capital market with highly mobile short-term funds.

These forms of interdependence had profound effects on the functioning of the international as well as domestic monetary systems. The developed countries committed by the Articles of Agreement to maintain fixed exchange rates (and unwilling to devalue their currencies) had to intervene to protect the value of their currencies in the face of huge monetary movements. The monetary interdependence also resulted in weakening of national monetary policies. For example, the policy of high interest rates used to curb inflation was increasingly undermined by capital inflows caused by the very same high interest rate policy.

In spite of its large economy relative to those of Europe and Japan, this monetary interdependence also affected the U.S. The overvaluation of the American dollar, due partly to domestic inflation and partly to the devaluation of other currencies, had adverse effects on the American economy. The overvalued American dollar discouraged American exports and encouraged imports and capital outflows. In 1971 the US balance of payments deficit soared and for the first time in the Twentieth Century the US recorded a balance of trade deficit. In the same year President Nixon announced, without consulting the IMF, that the American dollar would no longer be convertible into gold and

that the US would impose a 10% tax on dutiable imports[†].

Throughout 1971 there was a series of negotiations among the Group of Ten and the US to find a way out of the crisis. The negotiations resulted in the so-called Smithsonian Agreement of December 1971. In this Agreement fixed exchange rates were restored but currencies were allowed to float with a margin of plus or minus 2¼% (which was twice the range allowed by the Bretton Woods Agreement). America agreed to devalue the dollar while Europe promised not to drift into protectionism.

The Smithsonian Agreement was short-lived. The continuous capital movement led to new pressure on the Smithsonian rates and a new currency crisis developed. The situation could not even be rescued by a second 10% devaluation of the American dollar in 1973. Consequently, the system of fixed exchange rates collapsed and developed countries began to float their exchange rates. Floating rates were in flagrant violation of the provisions of the Fund's Articles and in particular Article IV concerning par values and exhange stability. Yet this did not raise any protest from the Fund. Instead the Fund was given the task of legitimizing the "managed floating" of exchange rates according to the wishes of the rich countries.

These events took place while the Committee of Twenty (established within the IMF and composed of 11 developed and 9 developing countries) was discussing the reform of the International Monetary System. While

---

[†] For these developments, see Solomon (1983) *op. cit.*, pp.181-187.

this Committee debated, the Arab oil exporting countries together with the other members of the Organization of Petroleum Exporting Countries (OPEC) increased the price of oil dramatically. This incident not only undermined the proposals for reform raised by the Committee of Twenty but also changed the whole strategy of reform†. The immediate task of the weakening Fund became the rescue of the countries which were hit by the sudden oil price hike. The Committee of Twenty was replaced by an Interim Committee to deal with the problems arising from the oil crisis.

In 1975, when the Western industrial countries recovered from the immediate impact of the oil crisis, some attention was given to the question of exchange rates and international reserves. This time negotiations proved difficult because of the conflicting interests among the Group of Ten. On the one hand Europe and Japan, fearing the effects of the weakening dollar and floating exchange rates on their exports were eager to reach some sort of compromise with the US; on the other hand the US, satisfied with its increasing exports, was resisting any proposal for the return to fixed exchange rates.

At the IMF meeting in Jamaica in 1976 a compromise was reached to the satisfaction of all the Group of Ten members and Japan. The floating of exchange rates was made legal but it was also made possible for other countries, including some EEC members, who wished to maintain fixed exchange rates to do so. At the insistence of France a provision was made for the return to generalized fixed exchanges at some future time.

---

† Committee of Twenty (1974), International Monetary Reform: Documents of the Committee of Twenty (Washington, D.C.).

The Second Amendment of the Fund's Articles of Agreement which came into force following these developments, made no substantial changes in connection with conditionality. The only change was that the Fund was able to permit the Buffer stock facility (introduced in 1969) to "float" alongside the gold tranche. Other facilities were also allowed to "float" in this manner, provided that a decision for this purpose was taken by the Executive Board with an 85% majority of the total voting power.

In 1979 the Executive Board adopted a decision entitled "Use of Funds General Resources and Stand-By Arrangements" which dealt with conditionality among other aspects of the Fund's activities. These decisions, which came in 12 paragraphs, made no profound change regarding conditionality[†]. They were mere declarations of the conditionality practices which had emerged since the beginning of the multilateral management of the international monetary system. However, 2 paragraphs of the decisions were designed to answer the growing criticisms of conditionality raised by some developing countries of the Fund. Paragraph 8 provided that:

> *"The Managing Director will ensure adequate co-ordination in the application of policies relating to the use of the Fund's general resources with a view to maintaining the non-discriminatory treatment of members".*

While Paragraph 4 provided that:

> *"In helping members to devise adjustment programs, the Fund will pay due regard to the domestic, social and political objectives, the economic priorities, and the circumstances of members, including the causes of their balance of payments problems".*

[†] For these paragraphs, see Gold (1979) *op. cit.*, pp.20-36.

Paragraph 8 was designed to answer the accusation that the Fund imposed more severe conditions on some countries than others; While Paragraph 4 was to answer the complaint that the Fund programmes undermine the authority of national governments and hinder the pursuit of national economic, social, and political objectives.

These decisions which in themselves contain an element of admission would not rectify the situation and ensure the impartiality of the IMF. The very acceptance of the IMF programme would mean the loss of the government's moral authority since the government would have to admit that it was guilty of economic mismanagement in its previous policies so as to justify its adoption of the Fund programme. More than that, in practice it is very difficult to see how the IMF could pay due regard to national economic, social, and political objectives especially, if these objectives are to be achieved by measures which are unpopular to the Fund - such as expansion of the government sector, price controls, and nationalization of foreign enterprises[†]. The Fund, however, has erected defence lines against such attacks. In explaining Paragraph 4 it was asserted that the Fund would pay due regard to national objectives only if such objectives were accompanied by policies which would not impede adjustment. But in constructing country programmes, supported by its credit, it is the IMF that decides which policies would impede adjustment and which would not.

[†] The IMF policies are analysed in Part 2 of this Chapter.

The Fund bias is inherent in its Articles of Agreement and its voting system which gives the controlling voice to a handful of developed countries. As long as this is the case, it is very difficult to see how the IMF could be evenhanded in treating its different members, irrespective of the economic and political interests of the countries that control it.

The Oil Crisis and the Spread of Conditionality

The oil crisis and the inflationary pressures that followed it had a major impact on international monetary management. Oil-exporting countries accumulated vast surpluses while the deficits of oil-importing countries mounted. In 1974 alone, an estimated US $ 70 billion were transferred from oil-importing to oil-exporting countries[†]. In the same year most of Europe and Japan swung from payment surplus to payment deficits. The poor non-oil developing countries were doubly penalized by the oil crisis, since they had to import not only high-priced oil but also inflated industrial products. The current account of the non-oil less developed countries went from a deficit of US $ 11.3 million in 1973 to US $ 29.9 billion in 1974, and US $ 37.7 billion in 1975[††].

On the other hand, oil-exporting countries moved from a surplus of US $ 6.5 billion in 1973 to a surplus of US $ 67.8 billion in 1974[‡].

[†] For an analysis of the effects of the oil crisis see Argy, V. (1981) The Post-War International Money Crisis: An Analysis (George Allen and Unwin), pp.88-96.

[††] For an analysis of the effects of the oil crisis on non-oil developing countries, see Dell, S. and Lawrence, R. (1980) The Balance of Payments Adjustment Process in Developing Countries (Pergamon Press).

[‡] *Ibid.*, p.2. See also OCED Economic Outlook (December 1978).

In the short period following the oil crisis, the imports of oil-exporting countries from non-oil countries were far from sufficient to channel back these huge surpluses to non-oil producing countries. Here a new recycling problem was created.

This provided the IMF with the opportunity to devise a long-term recycling mechanism and hence play a new and important role in the management of the International Monetary System. When the recycling question was debated by the Group of Ten, the Americans argued strongly for a US 25 billion fund outside the IMF and under the Group of Ten. While the EEC, with some of its members badly hit by the oil price increase (Italy, France and Britain), pushed for a US $ 8-12 billion facility within the IMF. There was a deadlock for several months between these two proposals until finally in January 1975 a compromise was reached. It established a US $ 6 billion facility within the IMF to supplement the US $ 3 billion facility established in 1974 to finance oil-induced deficits.

In the end the funds entrusted to the IMF were inadequate to deal either with the oil deficit problem or the recycling problem. It was rather the Western commercial banks and other financial institutions, such as the Eurocurrency market, that played the major part in recycling and financing deficits. These institutions accepted huge deposits from oil exporting countries and loaned them to oil-importing countries. In 1974, 55% of the oil surplus was deposited with private commercial banks (mostly American) and the Eurocurrency market .

For these statistics, see Morgan Guarantee Trust Company of New York, World Financial Markets, October 1975; also cited in Argy (1981), *op. cit.*, p.92. See also Financial Times, London 28, 1981.

The oil funds were also recycled through investments by the oil surplus countries in Western industrial countries. This included investments in treasury bills, bonds, equities, direct investments, and loans. In 1974 the share of these forms of investment in the total oil surplus amounted to 32%, 43% of which was invested in the U.S.[†]. These massive investments not only facilitiated the recovery of the industrial world from the immediate problems arising from the oil crisis, but also strengthened their productive power.

The poor non-oil developing countries received only a minute amount of the oil surplus (in the form of loans and grants). This, in addition to the IMF financial incapacity to deal with their oil-induced deficits, forced these countries to borrow heavily from private commercial banks. The severe terms of borrowing had a large adverse effect on their level of indebtedness. By 1977 the debt outstanding of the non-oil developing countries amounted to US $ 204.1 billion of which US $ 113.6 billion was due to commercial banks[††].

The second rise in oil prices in 1979, together with the growing concern in the Western World about the amounting indebtedness of the non-oil developing countries, led to what was known as the institutionalization of the oil debt. This institutionalization idea, which was initiated by private American banks, meant that the task of managing these debts should be given to an international institution. This task was assigned to the IMF. It was seen by many private lenders as the only institution which could ensure the safety of their money by

---

[†] *Ibid.*

[††] See, Brittain, B., W. H. (1977) "Developing Countries External Debt and Private Banks", Banca Nazionale del Lavoro Quarterly Review, No.123, December.

applying its strong disciplinary measures.

The institutionalization of loans led to the spread of conditionality to include commercial banks. This took the form of an unwritten agreement between the Fund and the commercial banks. The essence of this agreement was that private commercial banks would not lend to a "troubled" developing country unless the country accepted the policy and conditions of the IMF[†]. The commercial banks, which have no power to dictate a country's economic policy, were happy to have the Fund dictate these policies on their behalf.

Towards the end of the 1970's the Fund's imposition, and the acceptance by Fund members of IMF-styled programmes, became increasingly the condition for entering into loan contracts with private lenders. During the period 1977-1983 the Fund system of conditionality was imposed by the IMF on behalf of private commercial banks on many developing countires. This included, Zaire, Sudan, Jamaica, Egypt and Turkey. In the case of Zaire, for example, the negotiations were undertaken by the banks themselves while the IMF stood as a watchdog on the sidelines. Thus the Fund, which was deprived by the developed countries of its principal role of managing exchange rates by the swing to floating currencies, was given the new role of managing the debts of developing countries.

Another significant, oil-related problem was the sudden shift in monetary power. The vast petrodollars meant that some countries outside the Group of Ten now had the power to upset the system and endanger

---

[†] See Clarke, P. (1977) "Will the Banks and the Fund Make an Example of Turkey?", Euromoney, September.

their interests. A method would have to be devised to ensure the collaboration of these new powers within the network that steers the IMF.

In 1977 Mr. Witteveen, the Fund's Managing Director, visited Saudi Arabia - the richest OPEC country - to urge the Saudi authorities to join some form of industrial-country alliance within the IMF, such as the Group of Ten. Although Saudi Arabia refused to openly join such an alliance, they agreed tacitly to fully co-operate with it.

A more direct way of increasing the participation of Saudi Arabia and other petrodollar countries in the network that steers the IMF was to increase their quotas and hence their voting power[†]. Under the 1978 version of the Fund's quotas, the share of the OPEC in the total voting power was increased from 5% to 12.3%[††].

Another way through which the oil-surplus countries were integrated into the system was the creation of the so-called Witteveen Facility (or the Supplementary Financing Facility). Established in 1977, after his visit to Saudi Arabia, the Witteveen facility was technically outside the Fund's normal lending system, involving an informal system of bilateral arrangement between potential lenders and potential borrowers, with the IMF taking the role of the middleman. However, the IMF devised a new method of making funds available, with lenders giving the money to the IMF and the IMF lending and imposing severe conditions on each borrower.

[†] See Solomon (1983) *op. cit.*, p.282.

[††] IMF Survey, September 18, 1978.

The Saudis and other surplus countries were the principal financers of the Witteveen facility. In 1978 Saudi Arabia and Kuwait contributed an amount of US $ 20 billion to this facility. In this sense, the Witteveen facility can be considered as a mechanism of recycling resources from surplus countries to non-oil developing countries which were bound to be its potential users. Yet, unlike other forms of recycling mechanisms operating for the benefit of industrial countries, it carries with it the full weight of the IMF's tough conditionality measures.

The Fund's Credit Facilities and their Conditionality

Conditionality as defined by the Fund represents the policies that the Fund imposes on member countries seeking the use of the Fund's credit facilities. The present lending facilities can be classified into two broad categories: tranche credit policies, and special credit policies. The so-called stand-by arrangement is the channel through which the funds borrowed under these facilities are made available.

Tranche Credit Policies

As was noted earlier, if the Fund's holdings of a member's currency are less than its quota, the difference between the two is called the reserve tranche or the gold tranche. Drawings on the gold tranche are not subject to conditionality. Further drawings are made in 4 credit tranches each of 25% of the member's quota.. The

conditionality accompanying the use of the first credit tranche (i.e. when the Fund's holdings of a member's currency rises from 100 to 125% of quota) is that the country must adopt policies to overcome its difficulties. Unlike the other three tranches, the conditionality of the first tranche allows the borrowing country to design its own policies to overcome the difficulties†.

The use of the other 3 credit tranches, which raise the Fund's holdings of the members currency from 125% to 200% of quota (which are made available through stand-by arrangements) is subject to severe conditionality involving a full-scale IMF programme (see Table I.1). Drawings under all tranche policies are limited to 100% of quota. However, this limit may be waived by a decision of the Executive Board.

Special Credit Policies

The special credit policies refer to those other than the credit tranche policies discussed above. According to the IMF these policies are called special because they deal with specific payments difficulties. The special policies in existence since mid-1979 are those that relate to Compensatory Financing, Buffer Stock Financing, the Witteveen Facility (which was renamed the Enlarged Access Policy), and Extended Facility.

---

† For the different IMF credit facilities and their specifications, see IMF Survey: Supplement on the Fund May 1981. See also IMF Survey, May 22, 1978 and Gold (1979) *op. cit.*

Table I.1: Financing Facilities of the Fund and Their Conditionality

Type	Description
Reserve Tranche	Condition - balance of payments need.
Tranche Policies	
First Credit Tranche	Program representing reasonable efforts to overcome balance of payments difficulties; performance criteria and installments not used
Higher Credit Tranches	Transactions requiring that member give substantial justification of its efforts to overcome balance of payments difficulties; resources normally provided in the form of stand-by arrangements which include performance criteria and drawings in installments.
Extended Facility	Medium-term program for up to three years to overcome structural balance of payments maladjustments; detailed statement of policies and measures for first and subsequent twelve-month periods; resources provided in the form of extended arrangements which include performance criteria and drawings in installments.
Compensatory Financing Facility	Existence of temporary export shortfall for reasons largely beyond the member's control; Member co-operates with Fund in an effort to find appropriate solutions for any balance of payments difficulties.
Buffer Stock Financing Facility	Existence of an international buffer stock accepted as suitable by Fund; member expected to co-operate with Fund as in the case of compensatory financing.
Supplementary Financing Facility/ Enlarged Access Policy	For use in support of programs under stand-by arrangements reaching into the upper credit tranches or beyond, or under extended arrangements, subject to relevant policies on conditionality, phasing, and performance criteria.

Source: IMF Survey, Supplement on the Fund May 1981, pp.6-10.

The compensatory facility allows members to borrow so as to finance balance of payments deficits(arising from export shortfalls) caused by circumstances beyond the control of the member. To use this facility the member must satisfy the Fund that the shortfall was caused by short-term factors beyond its control. The amount of money which a member can draw under this facility is determined by the Fund's estimate of the shortfall. The export shortfall for the latest 12-month period preceding a drawing request is established against an estimate of the medium term (5-year) trend of the member's exports. This is centred on the shortfall period and based on the estimated forecast of export prospects for the 2 years succeeding the shortfall period. The amount which a member can draw under this facility cannot exceed 100% of its quota.

In 1981 this facility was extended to include compensation for difficulties caused by rises in the costs of cereal imports. An excess in cereal costs is calculated as the costs of such imports in a given year less their average cost for the 5-year period centered on that year. The limit on drawings on excess cereal imports is the same as that of export shortfall, but there is a joint limit of 125% of quota in respect of cereal import excesses and export shortfalls together. These facilities are in addition to drawings under tranche policies so that a member may use the Fund's resources in an amount that could increase the Fund's holdings of its currency beyond 200% of quota.

The conditionality accompanying the use of the compensatory facility is that the country must co-operate with the Fund to find appropriate

solutions for any balance of payments difficulties. The form of this co-operation is not specified. In practice, drawings on this facility is often made conditional upon the member's adoption of an IMF programme supported by credit tranche policies or extended arrangements†.

The Buffer Stock Facility permits a member to borrow in order to finance its contribution to international buffer stocks of primary products. Drawings for buffer stock financing cannot exceed 50% of quota. The conditionality attached to this facility is the same as that of the compensatory financing facility.

According to the Fund the members which qualify for the use of the Extended Facility are those that have serious payments imbalances relating to structural maladjustments in production, trade and prices. It is also said to be available for countries that have weak balance of payments that prevent the pursuit of an active development policy. Borrowing under this facility permits a country to draw an amount equal to 140% of quota in addition to that permitted under tranche policy. Cumulatively, drawings under this facility must not raise the Fund's holdings of a member's currency above 265% of the member's quota, excluding holdings relating to compensatory financing, buffer stock financing, and the oil facility.

The purpose of the Enlarged Access Policy (which replaced the Witteveen facility following the full commitment of the resources of the latter) is said to provide supplementary financing in conjunction with

---

† See for example, the experience of Zaire in Chapter Seven.

the use of the Fund's ordinary resources to all members of the Fund facing serious imbalances that are large relative to their quota. The Enlarged Access Policy, like its predecessor the Supplementary Facility, is used only in support of IMF programmes under stand-by arrangements reaching into the Upper Credit Tranches or under Extended Arrangements.

The amount of credit under this facility is determined according to guidelines adopted by the IMF from time to time. At present a limit of 150% of quota annually or 450% of quota is specified. At the same time, a limit of 600% of quota applies on the cumulative use of the Fund resources. These limits exclude drawings under the Compensatory and Buffer Stock Facilities or outstanding drawings under the Oil Facility.

The conditionality accompanying the use of the Extended Facility and the Enlarged Access Policy are similar to that of the Upper Credit Tranche Policies. It includes a full-scale IMF programme including phasing and performance criteria. In the present IMF operations phasing refers to the practice of making credit available in defined installments. Phasing in this manner is applicable to credit that exceeds the first credit tranche. The availability of each installment is conditional on the satisfaction of the IMF performance criteria. Phasing and performance criteria are adopted by the Fund to ensure the obedient behaviour of the borrowing country and its adoption of the IMF policies.

The performance criteria are based on Macro and Micro economic variables specified in stabilization programmes and are often referred to as programme targets. Besides these Macro and Micro quantifiable

elements, the performance criteria also includes stated unquantifiable elements.

The quantifiable elements require the borrowing country to adjust some economic variables to certain quantifiable limits. The economic variables which the Fund uses in this respect are: the volume of credit of the Central Bank and Banking System, the volume of government current and capital expenditure, the money wage rates, prices of goods and services subsidised by the government, tax rates, and the volume and maturity of new foreign loans.

The stated unquantifiable elements oblige the borrowing country to remove the following: dual exchange rates or any other type of multiple currency practice, restrictions on payments, and transfers in current international transactions or any kind of trade restriction and controls on profit repatriations.

In the case where any of the performance criteria stated in the IMF letter of intent are not satisfied by the borrowing country, this would be considered by the Fund as divergence from programme targets and the country's right to draw on the next installment might be suspended. Representatives of the borrowing country discuss these targets with the Fund, yet the Fund officials who adopt "take-it-or leave-it" tactics often have the final word.

As it was shown, the Fund credit facilities allow member countries to draw up to a cumulative amount of 600% of quota. However, the fact that drawings are established at such a large multiple amount of quota is very misleading if viewed as providing wide access to the Fund's

resources. It merely reflects a severe lag in Fund quotas in relation to world trade. In 1948 the Fund's quotas averaged about 16% of total imports of the developed countries. In 1980 this figure had fallen to less than 3% for developed countries and between 4-5% for non-oil developing countries[†]. This means that for most of the developing countries that have to rely on the Fund for balance of payment support, it does not take a large deficit to push them into drawings that amount to a multiple percentage of quotas.

Also out of the 600% made available, about 125% of quota is provided unconditionally or at low conditionality. This includes drawings on the reserve tranche, first credit tranche and compensatory financing. If quotas had been adjusted adequately with world trade (and had therefore been increased sixfold) the conditionality of the first credittranche would have applied to about 150% of present quota instead of only 25%[††]. Thus the method that has been chosen by the developed countries (that control the IMF) to expand the access to the resources of the Fund, had the effect of forcing borrowing countries into the conditionality of the upper credit tranches much sooner than would have occurred had quotas been adequately adjusted[‡]. Furthermore whether or not a country is forced to accept hard austerity measures does not depend on the character of its payments problems but rather on whether its cumulative drawings on the Fund facilities have risen beyond 125% of the country's quota.

[†] Dell (1981) *op. cit.*, p.16.

[††] Based on the Fund's quota prior to the 1983 proposed increases in quota. See *Ibid.*, p.29.

[‡] In the recent 1982/83 negotiations of increases in quotas, developing countries and France argued for doubling the quotas; Britain argued for an increase not exceeding 60%; while the US argued for an increase not exceeding 25%. In April 1983 an agreement was reached to increase quotas by 47.5%.

PART TWO

The Fund's Policy Model: The Evolution of Views

The predominant facet of any IMF stabilization programme is the fight against inflation. It is because of this emphasis on inflation that the entire IMF policy package is termed "stabilization programme". In the IMF policy diagnosis domestic inflation is the result of increases in money balances in excess of increases in the volume of goods and services in the economy. Excessive money balances are identified with government deficit financing and the expansion of bank credit. According to the Fund domestic inflation adversely affects the balance of payments through two main routes:

(a) the effect of inflation on capital flows;

(b) the effect of inflation on relative prices (or what the IMF calls inflation-induced distortions of the market forces and the pattern of trade).

The Effect of Inflation on Capital Flows

Domestic inflation is said to have two major effects; first it discourages the inflow of capital particularly in the form of direct foreign investment, since it causes considerable uncertainty regarding the future level of money costs and money receipts on foreign investments. Additionally inflation in the home country is said to lead to the adoption of foreign exchange restrictions which by

themselves frighten capital away and encourage capital flight through repatriation (see Figure I.1)[†].

Distortions of the Market Forces and the Pattern of Trade

In the IMF standard kit of analytical tools distortions of the market forces and the pattern of trade arise because rapid domestic inflation causes the prices of goods in the leading sectors of the economy to lag behind the general price level. Although it is difficult to make any generalization about the manner in which inflation distorts relative prices and how this affects the balance of payments, the Fund often identifies three sets of prices as the worst affected. These are:

(a) what the IMF calls "political" prices which include prices of public utilities, public transportation rates, prices charged by public enterprises, and prices of necessary goods controlled by the government to protect the lower income groups of the society;

(b) real interest rates; and

(c) the exchange rate which determines the relative prices between foreign and domestic goods.

Any government policy which aims at protecting poor consumers against rising costs and prices are regarded by the Fund as artificial suppression of inflation which distorts market forces - leading to an

---

[†] For an example of the IMF views in this respect see Dorrance, G. S. (1965) "Rapid Inflation and International Payments", Finance and Development Vol.11, No.2, June p.67.

inefficient allocation of resources. These measures are held responsible for the underdevelopment of important components of the economic infrastructure as well as the underdevelopment of the agricultural sector whose prices are said to often fall the victim of such measures. Furthermore, subsidization and underpricing of public utilities are said to undermine the profitability of public enterprises and to increase the government deficit thereby resulting in a further propagation of inflation.

The second set of prices which inflation is said to influence is real interest rates. As inflation proceeds, real interest rates are said to become inadequate or even negative. This is said to discourage domestic savings in financial forms and hence impede the development of financial intermediaries and capital markets. In addition unrealistic rates of interest are said to have adverse effects on the level of savings as a whole. The effects of inflation on "political" prices and real interest rates are asserted to affect the balance of payments indirectly through excessive government deficits and the sluggish growth of output[†].

Distortion of the pattern of trade, in the IMF literature, refers to the effect of domestic inflation on the exchange rate. Under fixed exchange rates, domestic inflation is said to render the local currency overvalued. The Fund's views on the effect of an overvalued currency are best represented by the following statement made by an Executive Director of both the IMF and the World Bank:

[†] For an example of the IMF views in this respect see Polak, J. J. (1968) "Have Economists said their Final Word in the Fight Against Inflation?", Finance and Development Vol.5, No.3.

> *"... The maintenance of an unrealistic exchange rate - it is hardly necessary to stress that in this context I mean an overvalued one - distorts the pattern of foreign trade, in that it stimulates imports by making them unduly cheap, and hampers exports by making them unduly expensive abroad. This by itself retards economic growth as it puts production for exports in an unfavourable international position ... in addition it adversely affects the balance of payments and this calls for contractionary internal measures unless trade and payments restrictions are introduced. In either event the condition for maximizing the rate of economic growth is far from being attained"* †.

The Evolution of Views

Since its establishment, and up to the early 1960's, the link between domestic inflation and balance of payments deficits (via the adverse inflation effect on capital flows) was the chief diagnostic argument emphasised by the IMF to persuade member countries to undertake stabilization programmes (see Figure I.1). During that period the other effects of inflation on the balance of payments, such as through an overvalued exchange rate, were regarded as secondary:

> *"It is hard to rank the effects of inflation on the country's balance of payments on any scale of severity. However the effect of a strong inflation on capital flight, must stand high on any such list"* ††

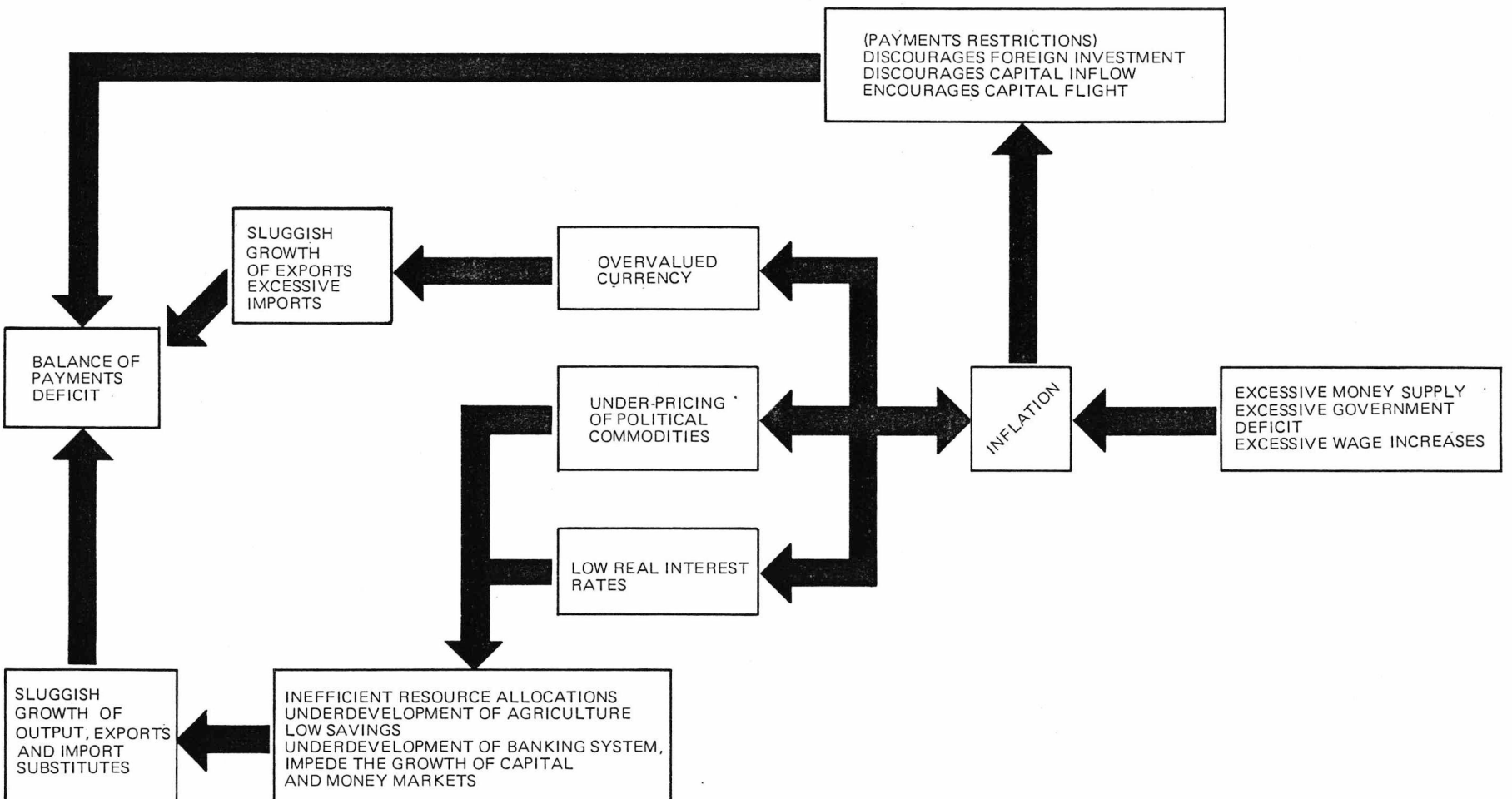
In those early years the Fund did not disguise the fact that its hostility to inflation was strongly influenced by the effects of inflation on private foreign investment. This was explicitly stated by the Fund's Chief of Finance Division:

---

† Lieftinck, P. (1964) "Monetary Policy and Economic Development", Finance and Development, Vol.1, No.3, December, p.156.

†† Dorrance (1965) *op. cit.*, p.69.

Figure 1-1: The IMF Diagnosis of Payments Deficit



NOTE: ARROWS SHOW THE DIRECTION OF CAUSATION, e.g. EXCESSIVE MONEY SUPPLY CAUSES DOMESTIC INFLATION

> *"One of the differences between stable and inflationary economies is that investors can make reasonable estimates of future money costs and money receipts in the stable countries, while this is impossible once inflation is well under way. Further this uncertainty bears most heavily on foreign investors. All the chances in the lottery are stacked against them. International investment is, in any event, likely to be more hazardous than domestic investment. With inflation, the hazards involved in movement of international capital are increased by the unpredictability of exchange rates. Not only are the net returns on investment in the developing country's currency unknown, but the returns in terms of the investor's currency are even more speculative so it is not surprising that foreign investors tend to shy away from countries with extreme inflation and that such countries tend to cut themselves off from access to resources from abroad ... As suggested above strong inflation usually leads to the adoption of payments restrictions. Among the first candidates for restriction are payments on foreign capital. Even if assurance are given that foreign investors will be favourably treated, experience have taught these investors to be wary of restrictive systems which usually contain considerable administrative arbitrariness"*[†].

This heavy emphasis on the inflation-induced capital flight (as a major cause of balance of payments disequilibria) also seems to have affected the IMF policy prescriptions. The depreciation of the exchange rate, which is now widely used, was only a measure of last resort in that era. This was because currency depreciation was viewed as undermining confidence in the country's currency thereby encouraging capital outflows and discouraging capital inflows. The rise in import prices consequent upon devaluation was regarded as undesirable because it further propagated domestic inflation. On the other hand, the maintenance of an over-valued exchange rate, or the attempt to support exchange rates in the face of rapid inflation, was also considered as undesirable by the IMF.

[†] Dorrance (1965) *op. cit.*, pp.67-69.

Since both currency depreciation and the maintenance of overvalued exchange rate were considered as undesirable, the message was that inflation must be checked in its early stages before it undermines confidence in local currency. Accordingly,the early IMF stabilization programmes were aimed at bringing inflation to a level that would be compatible with exchange rate stability i.e., controlling inflation to a level broadly equivalent to that prevailing abroad. The important features of those programmes was thus anti-inflationary monetary and fiscal policies[†]. Exchange rate policies were confined to the simplification of exchange rate systems providing for the establishment of one or two fluctuating exchange rates in place of a "complicated" multiple exchange system.

The major indicator of the success achieved by a stabilization programme in that early period was a slower growth of inflation, and a crucial condition for a lasting success was the ability of the governments to refrain from inflationary deficit financing and to maintain credit restrictions until inflation psychology had given way to confidence in monetary stability[††].

The emphasis of the Fund's diagnosis on inflation-induced capital flight, and the adverse effect of inflation on foreign private investment, as the major causes of balance of payments disequilibria, coincided with the era of the US unilateral management of the international monetary system. The fight against inflation,which was the primary

---

[†] For the anti-inflationary measures adopted in those early programmes, see IMF Annual Report 1958 pp.73-76.

[††] IMF Annual Report 1958, pp.72 and 1959 p.7.

objective of IMF stabilization programmes was compatible with the creation of a healthy environment for the expansion of United States foreign investment in Western Europe and Latin America. When this era came to an end, and the United States was forced to share the management of the international monetary system with the emerging powers of Western Europe, this brought a profound change in IMF policy objectives.

The major economic developments which paved the way for this change were: the increased competition between Western Europe, Japan and the United States for export markets and foreign investments, the growth of payment deficits of less developed countries, the growth of aid-tying practices, and the change in the style of aid-giving including the creation of the aid-consortium technique.

Throughout the 1950's, the payments balance of the poor Latin American countries, and the newly independent countries of Africa and Asia were put under severe strain. The post-war recovery of the economies of Western Europe and the development of their agriculture, brought about a large decline in the demand for the primary products produced by these poor countries, causing a large drop in their prices. Over the period 1950-1962 the terms of trade of these countries declined by an average of 20%. While their export volume increased by 52% the import capacity of their exports increased by no more than 44%. The counterpart to this was an increase in the volume of exports from industrial countries to poor countries of 90%, while the import capacity of the exports of industrial countries increased by 100%[†].

[†] IMF Annual Report 1963, pp.53-65.

This downward trend in the terms of trade of poor countries was reinforced by the increased degree of trade liberalization and intensification of agricultural protectionist policies among industrial countries by favouring imports from within their group and discouraging those from outside. This state of affairswas aggravated by a massive capital drain from the poor countries to Western Europe (mainly as a result of political events with the establishment of national governments in the former colonies, and the consequent emigration of Europeans). There are no statistics to assess the magnitude of this capital flight from Africa and Asia, but the figures which exist for Latin America suggest that it averaged US $ 300 million annually during the 1950's and somewhat more in the 1960's[†].

While this process of capital drain gathered momentum, a new phenomenon was born - large scale economic aid from industrial to less developed countries. This large scale aid-giving process,which was virtually non-existant in the early post-war period, brought with it the practice of aid-tying and led to the establishment of aid-consortia. The practice of aid-tying whereby aid-recipient countries were "tied" to spend aid funds on the purchase of goods produced by the aid-giver was first practiced by the United States. The practice was later adopted by Western European countries and Japan in self-defence[††].

[†] IMF Annual Report 1963, p.62.

[††] Payer (1974) *op. cit.*, p.29.

The consortium technique was developed accidently when a group of 5 Western countries met in Washington in 1958 to consider a crisis in India's foreign exchange position[†]. In 1960 the same group met to consider the foreign exchange crisis of Pakistan[††]. From these two meetings the aid-consortium developed gradually to become an international conference of creditor countries which now work in concert to determine the terms of aid-giving and debt-rescheduling of the poor countries.

This era also witnessed a shift in emphasis from "project" aid to "programme" aid or what is called balance of payments support. The programme aid, unlike project aid, enabled donor countries to have a greater influence and control over the entire economic programme of the aid-receiving country. It is in a sense similar to the IMF stand-by arrangement, in that disbursements could be made conditional upon the satisfaction of specific performance criteria which in some cases linked to the IMF's programme targets.

As noted earlier it was in this era that the IMF conditionality was toughened with higher tranche drawings made subject to severe conditions. Large scale aid-giving in the context of the consortium did not weaken the IMF position, but strengthened it. The Fund became a key member in each consortium and was given the role of assessing the "credit-worthiness" of debtor countries. The flow of aid from the consortium became dependent on the IMF "Health Certificate".

[†] These countries were Canada, West Germany, Japan, the United States, and the United Kingdom. They were subsequently joined by Australia, Belgium, France, Italy, and Netherlands.

[††] For an account of these meetings, see Hoftman, M. (1968) "The Scaffolding of Aid", Finance and Development, Vol.5, No.4, December.

This is where the IMF began to develop the theme that its programme acts as a catalyst, attracting capital flows from sources other than the Fund. Consortium debt rescheduling under the auspices of the IMF became a reward which was offered to troubled countries which accepted and satisfied certain conditions. These developments were accompanied by changes in the IMF policy prescriptions. The Fund which was initially established to prevent competitive devaluations, began to systematically use currency devaluation as a measure to correct internal and external balance. This shift in emphasis from anti-inflationary measures which were used in the early post-war period, to exchange rate adjustment supported by demand management measures, was explained in the 1967 IMF Annual Report:

> *"Experience shows that the reallocation of resources can best be achieved by creating appropriate market incentives through a change in relative prices ... A policy of deflation alone may achieve this, but in a situation of serious imbalance, the required reduction of domestic expenditure will have undesirable consequences on the level of economic activity, and the process of economic growth. Under these circumstances an exchange rate accompanied by monetary and fiscal policies aimed at eliminating excess demand will permit the desired shifts of resources to take place without being as disruptive of economic growth"*†.

As devaluation was viewed to have favourable effects on the balance of payments, the rate of inflation which was the yardstick used to judge the success of early IMF programmes, was supplemented with a balance of payments criterion. Although the balance of payments became the primary target of its programmes, the IMF evaded a clear statement of the objective to be achieved such as "eliminating the current account deficit". This was made possible by the catalytic effect in attacting funds from other sources which the Fund claimed to be one of the benefits of its stabilization programmes.

---

† Pages 40-41.

Here the Fund adopted the so-called "viable" balance of payments as its ultimate programme objective. This viable balance has been defined by a Senior Advisor of Exchange and Trade relations of the IMF:

> *"For a developing country a viable balance of payments typically means a current account deficit that can be financed on sustainable basis, by net capital flows in terms that are compatible with the development and growth prospects of the country and therefore with its debt-carrying capacity"*[†].

Thus the primary objective of the IMF stabilization programme is not to eliminate trade deficits of poor countries, thereby reducing their reliance on foreign aid, but rather to ensure that such deficits can be sustained by continuous flows of aid from rich to poor countries. According to the Fund, aid is a desirable means to bridge trade deficits rather than to supress them. It is worth noting that in the early post-war period much of the aid extended by the United States to Western Europe was interpreted by the Fund as "financing" transactions and therefore considered as a below-the-line item in its balance of payments accounting. Following the emergence of aid-giving to developing countries, the Fund position was changed. Aid became an above-the-line transaction in IMF balance of payments accounting. The reason for such a change was explained by the Deputy Director of the Fund's European Department:

[†] Guitian, M. (1982) "Economic Management and International Monetary Fund Conditionality", in Killick, T. (ed.), 1982) Adjustment and Financing in the Developing World (IMF and ODI, Washington, London).

"For unlike the post-war economic aid received by the European countries, aid to developing countries constitutes a continuous source of financing. In general, therefore, the receipient countries are not expected to adjust their balance of payments to do without the aid as were the European countries during the immediate post-war period"[†].

As noted earlier, the 1973 oil crisis brought about significant changes in the international monetary environment. The West, hit by the oil recession, reduced its concessional aid to the poor, non-oil developing countries which borrowed heavily from private commercial banks to finance their mounting trade deficits. The resultant massive indebtedness of these countries became an alarming problem which put the whole international monetary system in jeopardy. The IMF was then given the responsibility of managing the debt of the poor, non-oil countries. This was where the Fund formulated a new theme under which its post-oil crisis programmes were presented. The new theme is what the Fund called supply management or "structural adjustment". The need for supply management was said to be dictated by the new long-standing nature of balance of payments deficits in developing countries.

This shift to supply management had two features. First, the period of Fund programmes was lengthened by the introduction of the Extended Arrangement which has a possible time period of 3 years. This also meant the lengthening of the time period over which the Fund can conduct the economic affairs of borrowing countries. Second, debt management in the form of ceilings relating to maturity and terms on the acquisition of new external debt became an important programme element.

[†] Host-Madsen, P. (1966) "What Does it Mean: A Deficit in The Balance of Payments", Finance and Development, Vol.3, No.3.

Apart from these cosmetic changes there were no profound alterations in the IMF policy-mix. The supply potential of poor countries is to be realized by the same standard model of devaluation and anti-inflationary measures - with the difference that devaluation is now viewed not merely as an instrument for balancing external accounts, but also as a powerful instrument of development policy, which allows a proper choice of production techniques and promotes economic growth through the expansion of the export sector.

The IMF Policy Model: The Alternative View

The critics of IMF conditionality have mostly adopted a structuralist stance, arguing that the Fund policy measures are based on a monetarist philosophy, which shows no appreciation of the special circumstances characterizing the less developed countries. They hold the view that the Fund puts too much emphasis on the fight against inflation, with no attention given to the underdevelopment problem faced by these countries . They maintain that the balance of payments problems of these countries are more structural than monetary in nature and that devaluation and anti-inflationary policies are not only inappropriate for such structurally-based deficits, but also harmful to the development prospects of these countries .

Kranser, S. D. (1968) "The IMF and the Third World", International Organization, Summer. See also Scott, A. D. (1967) "The Role of the International Monetary Fund in Economic Development", in Columbia Essays in International Affairs: The Deans Papers (Columbia University Press).

Generally most of the critics of the Fund have focussed on the nature of its policy prescriptions, their inappropriateness, and their incapability of achieving programme targets. An alternative view which will be argued here, is that the critics of the Fund miss the major mark because they evaluate and analyse Fund programmes in the light of the objectives claimed by the IMF. It will be argued that the real objectives of the IMF stabilization programme are to open the markets of the developing countries to the exports of the developed countries and to maintain the debt-dependence cycle. To expose this view a statement of the basic components of the IMF policy conditions is useful. These include:

(a) Abolition or liberalization of foreign exchange and import controls;

(b) Devaluation of the exchange rate;

(c) Domestic anti-inflationary policies including:

  (1) control of Bank Credit (or net domestic assets);

  (2) control of government deficits by curbs in spending; increases in taxes and prices charged by public enterprises; and abolition of consumer subsidies.

  (3) curtailment of wage increases

  (4) abolition of price controls; and

(d) Greater hospitality to foreign investments.

Liberalization of exchange and import controls means that all restrictions specifically designed to preserve scarce foreign exchange holdings are to be removed. The countries which use the IMF conditional resources are those that have experienced severe foreign exchange

shortage. The liberalization of trade imposed by the Fund under such circumstances is paradoxical. The large increase in imports consequent upon the relaxation of trade controls has to be financed by the IMF loan, and by the additional aid which might be attracted by the catalytic effect of the Fund programme. Thus aid in the IMF programme is given to finance these "liberalized imports"[†]. In some cases the increased importation of non-essentials generated in this way has been larger than the amount of aid received.

It is true that the liberalization of exchange and trade restriction is one of the fundamental objectives of the IMF - written into its Articles of Agreement. Yet, despite the huge body of the Fund's literature which preaches the welfare benefits of liberalization, it is imposed only on poor countries(which seek the Fund's conditional lending)while many of the Western industrial countries which control the IMF still practice various forms of trade and exchange restrictions.

The second plank in the IMF prescription is the anti-inflationary measures which are designed to reduce aggregate demand and curb inflation. However, while the Fund emphasises these anti-inflationary policies it imposes additional measures such as the dismantling of price controls, abolition of consumer subsidies, and increases in the prices charged by public enterprises which by themselves add to inflation. These policies, together with the money wage restraint imposed by the Fund, are designed to erode the real income of the consumer, and hence reduce aggregate demand for goods and services. This method of fighting inflation by means of measures which themselves propagate

---

[†] See Payer (1974) *op. cit.*

inflation has been termed "inflationary-deflationary measures".

Both the anti-inflationary and the inflationary-deflationary measures in the IMF programme, are intended to support the abolition of exchange and trade controls. The absence of these controls necessitates that the exchange rate be set at a level which equilibriates the demand for and supply of foreign exchange without recourse to controls. To do this, once the new level of exchange rate is established, and trade is liberalized, the anti-inflationary measures would be required to depress aggregate demand, and avoid excessive pressure on the new exchange rate.

Thus it can be argued that liberalization of exchange and trade is the primary objective of stabilization programmes, and that all other policies are designed to reduce aggregate demand, and counter-balance the predictable adverse effects of liberalization on the balance of payments. It follows logically that if the anti-inflationary policies were not implemented larger amounts of foreign aid and/or large depreciation of the exchange rate would be required. Thus, in the IMF programme, there is a trade-off between the amount of aid and the degree of liberalization on one hand, and between the degree of liberalization and the severity of demand management measures on the other. These ideas were implicitly stated by the IMF:

> *"It is, however, unlikely that the deficit in the balance of payments will be fully eliminated immediately after a devaluation. In order to reap the maximum advantage from the exchange rate adjustment, it may thus be necessary to have available adequate foreign financing to facilitate the avoidance or elimination of restrictions and to bolster confidence in the currency. The Fund has been an important source of such financing"*[†].

[†] IMF Annual Report (1967) p.41.

When a country is in a crisis due to increasing external debt and a heavy repayment schedule, the Fund adopts a sympathetic approach and promises to call for a rescheduling conference, if the government of the country concerned proves obedient enough to let the IMF conduct its future economics affairs. Together with the debt rescheduling, the Fund undertakes a rescue operation mobilizing new foreign aid to meet the country's immediate foreign exchange requirements[†]. The rescheduling of debt provides the government with a breathing space because the foreign exchange it does not have to pay back this year could be released for other purposes. However, both the new and the rescheduled debt will still have to be paid back in the future with interest charged on the deferred payments. Thus the Fund's principle of relieving external debts by increasing them is capable of repeating itself in a vicious aid-debt-dependency cycle.

This aid-debt-dependency cycle can be turned around either way (see Figure I.2). Starting from dependency, for example, the government of a developing country which undertakes economic reforms that involve nationalization of foreign investments, or any other measures which are not popular to its creditors, will face retaliatory actions in the form of capital flight and the drying up of capital inflows. The country being historically dependent on foreign investment and foreign capital will automatically find itself in a foreign exchange crisis. Using the IMF terminology, the balance of payments deficit which was "viable" and "sustainable" is no longer so, simply because foreigners choose to

---

[†] See Payer (1974) *op. cit.*, p.44-47.

curtail their aid. In fact, the IMF concept of a "viable" balance by itself lends support to this debt-dependency syndrome, and ensures the subordination of local governments to their foreign creditors.

Similarly in the case where foreign investments are concentrated in the export sector (which is often the case), with the bulk of their production shipped to their parent companies in the form of exports, foreign retaliatory actions might be enforced by parent companies deliberately boycotting the products of their subsidiaries. The result will be a drop in the demand for the exports of the country concerned, thereby reducing economic activity in the export sector. This, together with the consequent slow-down in economic activity in the other sectors of the economy, will increase unemployment and reduce government revenue while at the same time generating social and political pressures for greater government spending.

As the economic situation worsens with foreign creditors tightening the screw on the government the exchange crisis becomes acute and the country will have no option but to call in the IMF. The drying up of capital inflows, the flight of capital, and the drop in exports will provide the IMF "technical" diagnosis with the evidence of an overvalued exchange rate, and lack of confidence in the country's currency. Hence devaluation will be prescribed as a remedy. The slow down of economic activity will provide the evidence of "distortion" in the market forces. The widening government deficits will be viewed as the result of government pricing and subsidization policies. In short, the Fund technical diagnosis will observe the effects rather than the real causes of the aggravated economic

situation.

Having accepted the Fund's condition the IMF will convene a debt rescheduling conference and mobilize rescue aid for the troubled country, thereby making it even more dependent on foreign aid than before. The IMF programme will result in a large reduction in real incomes and wages. As a consequence the government loses popularity while at the same time social and political pressure for a change of government, increases. A new government comes into power (in some cases through a military coup)[†]. The new government promises radical social and economic changes. Capital inflow dries up, and capital leaves the country, and so on.

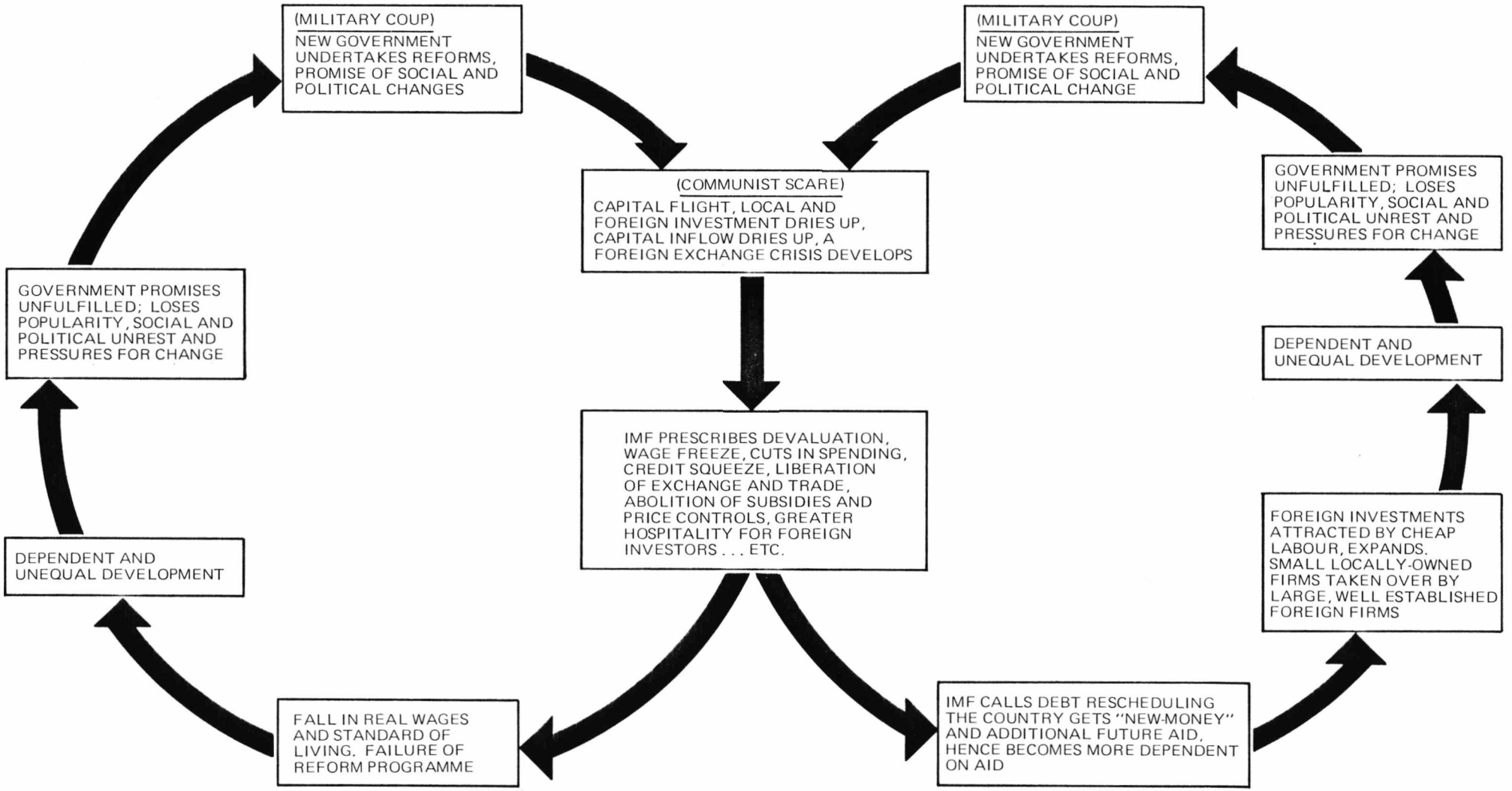
Besides making the country more dependent on foreign aid and imports the Fund's programme results in the weakening of the country's productive sectors. In the majority of developing countries the public sector, in addition to its role as a regulatory mechanism, it is also the vehicle of economic growth and development. The fact that the public sector is the largest investor in these countries is dictated by the economic situation and the lack of private investment. The Fund's stabilization programme typically results in the weakening of public enterprises including state-owned import substitute industries.

The Fund's programme hits public enterprises in different ways. The abolition of subsidies and the liberalization of imports means the loss of protected markets. The depression consequent upon the IMF anti-inflationary policies results in a fall in sales. Devaluation increases

---

[†] For the relationship between the IMF programmes and the overthrowing of democratic governments by military coups, see Payer (1974) *op. cit.* pp.44-48.

Figure 1-2: The IMF and the Aid-Debt-Dependence Cycle



the costs of fuel, spare parts and raw materials required for the running of these enterprises. The curtailment in government spending in addition to the contraction of bank credit, makes it difficult to get the funds required for their operations.

The planned development projects will also be affected by the programme. Devaluation results in a substantial increase in their budgetary costs due to the rise in the domestic price of capital goods. On top of this, the ceiling imposed on government spending, which does not distinguish between current and investment expenditure, halts the implementation process of such projects.

The Fund's hostile attitude towards public enterprises and the expansion of the public sector stems from its laissez-faire ideology which is in concert with its trade liberalization policy. This "free market" ideology which the Fund consistently imposes on developing countries reflects the development ideology of its most powerful member; the United States[†].

In encouraging private investment the Fund emphasises private foreign investment. Conditions relating to the creation of greater hospitality to foreign investment are often included in the IMF programme. Moreover, the components of the IMF programme favour foreign private investment compared with private domestic investment. The credit ceilings redistributes productive funds in favour of well-established foreign firms in the export sector[††]. Devaluation and liberalization benefit foreign-owned firms which obtain their inputs from their parent

---

[†] Kranser (1968) *op. cit.*, p.2.

[††] For an explanation see Chapter Two.

companies. The growth of local businesses will be impeded since they will not be able to compete with foreign producers, who because of their large sale, have lower unit costs.

The Choice of Criteria

The implementation of any IMF programme will have far reaching effects on all aspects of economic activity. It is therefore extremely difficult to develop a comprehensive test that captures all programme effects. However, since the claimed primary objective of all IMF programmes is the restoration of a viable balance of payments in an environment of price stability and substainable rates of growth, it is legitimate to focus on the effect of IMF programmes on the payments balance as the primary measure of their success or failure. The effects of IMF programmes on the rate of inflation and the rate of growth can be used as secondary yardsticks.

Empirical investigations of IMF programmes must confront two important questions: the first concerns the choice of statistical indicator for the balance of payments and the second concerns the standard of measurement of programme achievement.

The first issue arises because of the catalytic effect in attracting funds from other sources which the Fund counts as one of the benefits of its programmes. It is, therefore, argued that it is not sufficient simply to look at changes in the current account balance, because enlarged capital inflows will (if the borrowing terms are right) increase the size of viable current deficits[†]. However, the viability of current account

---

[†] Killick, T. and Chapman, M. (1982) "Much Ado About Nothing? Testing the Impact of the IMF Stabilization Programmes in Developing Countries", ODI (unpublished).

deficits is positively related to the availability of long term concessional financing, which has diminished in recent years[†]. Moreover, poor countries which seek the use of the Fund's conditional assistance are those which have borrowed beyond their repayment capacity. Under such circumstances it would be misleading to consider additional borrowing as an improvement in the health of their economics. It is the current account and in particular the performance of exports, that must be considered as the primary indicator of the soundness of the overall payments situation. Accordingly, the empirical investigation here will be concentrated on the current account. However, for the sake of argument, the hypothesis that the IMF programme attracts capital inflows can be tested separately by directly assessing programme effects on capital flows.

As for the question of the standard of measurement of programme achievement, three criteria suggest themselves. First, there is the positive or the practical standard, which compares the actual performance during and immediately after the programme, with the performance before the programme. This criteria is termed the "before-and-after test" or the "what-it-is relative to the what-it-was" test. The advantages of this test are its simplicity, and objectivity. Yet, in cases where economic variables were rapidly deteriorating in the period before the inception of the programme, this measure is not expected to give an

---

[†] Killick, T. and Chapman, M. (1982) "Much Ado About Nothing? Testing the Impact of the IMF Stabilization Programmes in Developing Countries", ODI (unpublished).

absolute improvement even if the programme was "successful". In these cases slowing down of deteriorations might be considered as a relative improvement.

The second measure is to compare what is actually achieved against the programme targets set by the IMF. One of the difficulties of this test, however, is the confidentiality with which the Fund protects information on country programmes. Another drawback is its subjectivity where results might be affected by any tendency towards over-ambition or conservatism in setting programme targets.

The third possible test is to compare what would have been in the absence of the programme with what actually happened.† Although this test is in principle the most attractive among the three measures. the trouble with it is the difficulty and subjectivity involved in estimating "what would have been" in the absence of devaluation. These difficulties may be minimized the more intimate the knowledge of the countries examined.

In our empirical investigation use will be made of both the before-and-after test and the what-would-have-been test. The second test, what is actually achieved relative to programme targets, will be used whenever the targets set by the IMF are made available. In addition to these three a fourth criterion, which can be termed "the prediction" test, will also be used. This involves econometric models which predict the possible effect of the IMF programmes on key parameters of the economy. Besides providing a direct test for the appropriateness of the IMF policy

†For a discussion of these three measures see *Ibid.* pp.4-5 and Guitian, M., (1982) *op. cit.*, pp.99-101.

diagnosis, such a criterion will also provide information regarding the possible outcomes of the IMF programme.

None of these tests is adequate to examine the validity of the claims raised by the alternative view. These claims require close analysis of issues which cannot be clarified by simply looking at statistical aggregates. These issues include: the type and extent of foreign involvement in the troubled country, local and foreign economic and political developments that gave rise to the country's foreign exchange crisis and the Fund's policy diagnosis and policy prescription in relation to the real causes of the crisis. Therefore, the claims of the alternative view are appropriately examined by means of detailed country studies, which can throw light on all these issues. For this purpose, the study contains a detailed account of the experiences of 3 less developed countries with the IMF. They are: Sudan (1978-83), Jamaica (1976-82), and Zaire (1976-80).

CHAPTER TWO

THE EFFECTS OF DEVALUATION ON THE BALANCE OF PAYMENTS: A SEARCH FOR THE IMF STAND

Introduction

The IMF often asserts that devaluation will have real effects on the economy, such as increasing the volume of exports, reducing the volume of imports, and improving the balance of payments. The IMF, however, does not offer a concrete devaluation model which explains its devaluation philosophy. The purpose of this chapter is to formulate a devaluation model which might be compatible with the Fund views.

To do this a simple model which explores the different avenues through which devaluation can affect the balance of payments will be described. Second, the different devaluation models which predict that devaluation can have real effects on the economy will be reviewed and in each model the routes through which devaluation operates will be identified. Third, with reference to the IMF writings, the Fund's views of how devaluation affects the balance of payments will be investigated and related to the different devaluation models. Finally, a model which represents the IMF devaluation philosophy will be formulated.

Devaluation and its Possible Effects

For devaluation to have real effects on the balance of payments it must initiate a real change in at least one real variable in the economic system. Let the real demand for any traded good (g) be a function of its price (P_T), foreign prices in domestic currency (P_m), and the level of nominal expenditure (E). That is:

$$g = g(P_T, P_m, E) \tag{2.1}$$

If this demand function is assumed to be homogeneous of degree zero in nominal prices and expenditure an increase in all variables by the same proportion will yield no real effects and the real demand will remain unchanged. That is:

$$\lambda^0 g = g(\lambda P_T, \lambda P_m, \lambda E) \tag{2.2}$$

Real effects will occur if at least one of the arguments in the demand function changes by less than in proportion to the others. There are 3 ways through which such a non-proportionate change might occur. First, a change in P_T relative to P_m (i.e., a change in the terms of trade) might affect the supply and demand for tradeables thereby influencing the balance of payments. In addition there are 2 other effects both of which operate through the effect of devaluation on expenditure. To illustrate, describe the level of nominal expenditure as

$$E = P_D\, h(W,L) \qquad (2.3)$$

where E is nominal expenditure, P_D is the domestic price level [†], W is the level of real domestic wealth and L is a vector of the marginal propensities to spend of the different economic agents in the economy. The two remaining sources of real change operate through the direct effect of devaluation on real wealth and through the devaluation-induced redistribution of wealth among groups with different marginal propensities to spend. If, for example, all prices increased by the amount of devaluation, the nominal level of expenditure will not - that is because nominal expenditure is a function of real wealth, which will fall as a result of the increase in domestic prices. Similarly, differing values within L will also result in real effects if devaluation redistributes income from say, wages to profits.

The 3 possible routes through which devaluation operates incorporates the basic elements of all devaluation models which predict that exchange rate changes will have real effects on the balance of payments. To facilitate a discussion of these models, first the assumptions needed to eliminate all possible causes of real effects will be identified then the different devaluation models will be introduced according to the assumptions they adopt to predict real affects.

To eliminate the sources of real effects a set of assumptions are needed. It can be assumed that all agents in the home country (including the government) have identical marginal propensities to consume. Second,

---

[†] Since all domestic goods are assumed to be tradeable the domestic price level (P_D), will be equivalent to the price of traded goods (P_T).

it can be assumed that devaluation causes all prices to increase in the same proportion. That is:

$$\dot{P}_T = \dot{P}_m = \dot{R} + \dot{P}_f \qquad (2.4)$$

where P_f is the price of foreign traded goods in foreign currency, R is the exchange rate " $\dot{}$ " denotes percentage change, and all other prices are defined as before.

The first assumption made above eliminates all sources of real effects which might come as a result of the devaluation-induced wealth redistribution among different groups in the economy. If this assumption is extended to read that all agents in all countries have identical marginal propensities to consume then the effects of any devaluation-induced transfer of wealth between countries will also be eliminated.

The second assumption eliminates the relative price effect. The only remaining source of real impact is through the direct effect of devaluation on real wealth. This can be seen by reference to the absorption model which defines the balance of payments as the difference between national income and national expenditure.

$$B = P_D \cdot Y - E(P_D, W) \qquad (2.5)$$

where B is the balance of payments, Y is the real level of domestic production, E is the nominal level of domestic expenditure, and all other variables are defined as before. Here, devaluation can affect

the balance of payments by directly affecting absorption through the effects of rising prices on consumption. This can occur through two mechanisms: the money illusion effect and the real-money-balance effect. The money illusion effect which might arise in the short-run will cause expenditure to fall as people continue to spend the same nominal amount of money even though prices have risen[†]. To eliminate such an effect the assumption of no money illusion is needed.

The real-balance effect rises because of the desire of people to hold a constant proportion of their wealth in the form of real money balances. As the devaluation-induced increase in domestic prices erodes the value of their real money balances, people will tend to hold more nominal balances to keep their real balanced intact which they do by reducing expenditure out of real income. As a result of the reduction of the real value of money, interest rates will tend to rise which will also tend to reduced expenditure. In terms of the absorption equation above, these effects will cause nominal expenditure to increase by less than in proportion to nominal GDP leading to an improvement in the balance of payments.

To eliminate the real-balance effect monetary policy can be introduced in the model, assuming that the money supply will be increased proportionately with prices so as to keep the value of real balances constant. In this case the real balance effect, as well as the effect resulting from the tendency of interest rates to increase, will be

---

[†] Assuming that people have the income to finance the increased expenditure resulting from price increases.

eliminated[†]. This suggestion implicitly assumes that money is net wealth and that increases in the money supply will increase domestic net wealth. The logic which supports this assumption, is that assets with no offsetting liabilities are net wealth.

Real Effects Through Change in the Terms of Trade

One way in which devaluation can have real effects is through a change in the barter terms of trade (i.e., change in the ratio of export prices to import prices measured in a common currency) while adopting the necessary assumptions to eliminate all other sources of real change. A devaluation model of this type is represented by the elasticity approach to the balance of payments. In terms of equation (2.1) above, this approach is consistent with assuming that the prices of domestic traded goods and the foreign currency price of foreign traded goods remain constant following devaluation. In this case the price of foreign traded goods in domestic currency will adjust according to:

$$\dot{P}_m = \dot{R} + \dot{P}_f \qquad (2.6)$$

where P_m is foreign prices in domestic currency, R is the exchange rate (the domestic price of foreign currency), P_f is defined as before, and "$\cdot$" denotes percentage change. Since both $\dot{P}_T$ and $\dot{P}_f$ are

---

[†] See Miles, M. A. (1978) Devaluation, the Trade Balance and the Balance of Payments, Business, Economics and Finance, Volume 11 (Marcel Dekker), pp.14-18.

assumed to be equal to zero,import prices in domestic currency will rise by the amount of devaluation while the country's terms of trade will deteriorate by the same amount.

$$\dot{P}_T - \dot{P}_m = -\dot{R} \qquad (2.7)$$

where $(\dot{P}_T-\dot{P}_m)$ is the percentage change in the terms of trade. This deterioration in the terms of trade is said to increase the demand for the country's traded goods (as a result of the implied fall in their foreign currency price) while reducing the domestic demand for foreign traded goods (because of the increase in their prices in domestic currency). Thus the elasticity approach views the deterioration in the country's terms of trade as an improvement in its price competitiveness Since $\dot{P}_T$ and $\dot{P}_f$ are assumed to be equal to zero,the subsequent increases in foreign and domestic demand will not erode the improved competitiveness. In terms of equation (2.1) this amounts to assuming that the supply price elasticities of foreign and domestic traded goods are infinite,so that the price of imports in foreign currency does not fall (i.e., $\dot{P}_f=0$) as the demand for them falls, while the price of exports in domestic currency does not rise (i.e., $\dot{P}_T=0$) as the demand for them increases.

The balance of payments definition consistent with the elasticity approach is the difference between the money value of exports and imports measured in a common currency. The balance of payments in domestic currency (B) is:

$$B = X - RM_f \tag{2.8}$$

where X is the value of exports in domestic currency and M_f is the value of imports in foreign currency. The change in the balance as a result of devaluation is given by

$$\frac{dB}{dR} = \frac{\partial X}{\partial R} - \left(M_f + R\frac{\partial M_f}{\partial R}\right)$$

$$= M_f\left[-1 + \frac{X}{RM_f}\cdot\frac{\partial X}{\partial R}\cdot\frac{R}{X} - \frac{\partial M_f}{\partial R}\cdot\frac{R}{M_f}\right] \tag{2.9}$$

Assuming that trade was initially balanced, i.e. $\frac{X}{RM_f}=1$, this can be written as:

$$\frac{dB}{dR} = M_f(e_x + e_m - 1) \tag{2.10}$$

where $e_x = \frac{\partial X}{\partial R}\cdot\frac{R}{X}$ measures the price elasticity of demand for exports and $e_m = -\frac{\partial M_f}{\partial R}\cdot\frac{R}{M_f}$ measures the price elasticity of demand for imports. Equation (2.10) is the well-known Marshall-Lerner condition which asserts that devaluation will improve the balance of payments if the sum of the demand price elasticities of exports and imports exceeds unity. This condition can be fully grasped by interpreting (-1) in equation (2.10) as measuring the ratio of the percentage change in the terms of trade to the percentage devaluation, so that the Marshall-Lerner condition can be expressed as:

$$\frac{\partial B}{\partial R} = \frac{\dot{X}}{\dot{R}} + \frac{\dot{M}_f}{\dot{R}} + \frac{(\dot{P}_T - \dot{P}_m)}{\dot{R}} \qquad (2.11)$$

and since from equation (2.7), $(\dot{P}_T - \dot{P}_m) = \dot{R}$, equation (2.11) can be expressed as:

$$\frac{dB}{dR} = 1/\dot{R}\ (\dot{X} + \dot{M}_f - \dot{R}) \qquad (2.12)$$

From (2.12) the balance of payments will improve if the proportionate increase in the value of exports ($=\dot{X}$) and the reduction in the value of imports ($=\dot{M}_f$) are sufficient enough to outweigh the deterioration in the terms of trade ($=-\dot{R}$). This will be the case only if the sum of the demand price elasticities is greater than unity. If trade was not initially balanced, it is clear from equation (2.9) that the Marshall-Lerner conditions must be modified to read:

$$\frac{dB}{dR} = 1/\dot{R}\ \left(\left(\frac{X}{RM_f}\right)\dot{X} + \dot{M}_f - \dot{R}\right) \qquad (2.13)$$

The larger the initial deficit $X<RM_f$ the more stringent the elasticity condition for a successful devaluation. If the elasticity condition is not satisfied, the balance of payments will deteriorate and the larger the initial deficit the larger will be the deterioration in the balance of payments.

This original form of the elasticity condition has been revised and modified in many ways, such as incorporating the elasticity of supply of exports and imports (Robinson, 1937) and income effects (Brown, 1942;

Harberger, 1950) and Stern (1973)†. What is important for the purpose of this study is that the balance of payments adjustment mechanism operates through the devaluation-induced deterioration in the terms of trade, which is viewed as an improved price advantage for the devaluing country. If, however, devaluation improves the terms of trade the balance of payments will worsen even though the elasticity conditions is satisfied.

Real Effects Through Relative Prices, Income Distribution, and Real Money Balances

It has been noted that devaluation can produce real effects on the balance of payments through the relative price effect, income distribution effect, and the real money balance effect. One devaluation theory which incorporates all three effects is the income or absorption approach to the balance of payments. Although this approach makes no explicit assumptions regarding the effect of devaluation on prices, its mechanisms of adjustment depend on the behaviour of relative prices. We may rewrite equation (2.5) as:

$$B = Y - E \qquad (2.14)$$

† Robinson, J. (1937) "The Foreign Exchanges", in Essays in the Theory of Employment (Oxford Blackwell). Brown, A. J. (1942) "Trade Balance and Exchange Stability", Oxford Economic Papers, April. Harberger, A. (1950) "Currency Depreciation Income, and the Balance of Trade", Journal of Political Economy, Feb. Stern, R. M. (1973) Balance of Payments Theory and Economic Policy", (London, Macmillan).

where Y is nominal national income and E is nominal national expenditure or absorption. According to this approach, the devaluation induced balance-of-payment correction can be evaluated in terms of whether it increases Y relative to E. Here devaluation is viewed to affect the balance of payments by a direct effect on income, a direct effect on expenditure plus an indirect effect through the devaluation-induced change in income on expenditure. That is:

$$\Delta B = \Delta Y - \Delta E - \phi\Delta Y \qquad (2.15)$$

where Δ denotes change as a result of devaluation and ϕ is the marginal propensity to absorb. Rearranging equation (2.15) yields:

$$\Delta B = \Delta Y(1-\phi) - \Delta E \qquad (2.16)$$

and the condition for a successful devaluation becomes

$$\Delta Y(1-\phi) > \Delta E \qquad (2.17)$$

Thus the effectiveness of devaluation will depend on its direct effect on income in conjunction with the value of ϕ, and the direct devaluation effect on expenditure[†]. Devaluation is said to affect income directly through three major routes: the idle resource effect, the terms of

[†] This analysis omits the interaction between changes in absorption and changes in income. For this see, Thirlwall A. P. (1979a) "The Interaction Between Changes in Income and Changes in Absorption in the Absorption Approach to the Balance of Payments", Journal of Macro-economics.

trade effect, and the resource allocation effect. Although often treated separately, these effects are interrelated and they all depend on the effect of devaluation on relative prices.

The idle resource effect in income refers to the effect of increased exports demand and import substitution on economic activity in the devaluing country through the familiar multiplier mechanism, provided there are unemployed resources. The question is, what will cause the production of exports and import substitutes to increase. From the export side this must come as a result of a fall in the price of exports (in foreign currency) which will stimulate foreign demand. Thus for this idle resource effect to get-off the ground an improved price advantage in terms of a fall in export prices in foreign currency is required. And for such a price advantage to be sustained export prices in domestic currency must not be allowed to increase by the proportion of devaluation. If export prices in domestic currency increased by the amount of devaluation, i.e., $\dot{P}_T = \dot{R}$, there will be no reason for foreign demand to increase and this part of the idle resource effect will be eliminated. Thus the magnitude of this effect will depend on the degree to which export prices fall and the foreign elasticity of demand†.

The second part of the idle resource effect is the increase in income as demand is switched to home produced goods. This shift in demand away from foreign goods (imports) requires an increase in the domestic currency price of imports relative to the price of domestic substitutes. The extent of this effect will thus depend on the degree of

---

† This analysis ignores the devaluation effect on the supply side of exports. This is discussed under the IMF devaluation model.

import substitution and the country's ability to increase production without a rise in domestic prices.

The increased income as a result of these two mechanisms will improve the balance of payments only if $\phi < 1$. If the propensity to absorb is greater than unity the balance of payments will deteriorate. However, as the propensity to absorb is the sum of the marginal propensities to consume and to invest, a high propensity to consume with a positive propensity to invest might cause ϕ to exceed unity.

Unlike the elasticity approach, the terms of trade effect under the absorption approach can go either way. Stern (1973) has shown that whether the terms of trade will deteriorate or improve following devaluation will depend on the product of the elasticities of supply exports and imports ($S_x.S_m$) and the product of the elasticities of demand for export and imports ($D_x.D_m$). If $S_x.S_m > D_x.D_m$ the terms of trade will deteriorate and if $S_x.S_m < D_x.D_m$ it will improve. However, if import prices in foreign currency did not fall as a result of devaluation (i.e., $P_f = 0$), then the deterioration in the terms of trade will be the condition for the increase in income, resultant from the increase in foreign demand for the exports of the devaluing country†. In this case, the idle resource effect and the terms of trade effect will work in opposite directions. The deterioration in the terms of trade will tend to reduce real income while at the same time it will tend to increase income via the idle resource effect. If the net result is a fall in real income the balance of

---

† See Machlup, F. (1956) "The Terms of Trade Effects of Devaluation upon Real Income and the Balance of Trade", Kyklos, fasc.4.

payments will worsen if $\phi<1$, but improve if $\phi>1$. Thus contrary to the assumptions of the elasticity approach, the balance of payments will worsen as a result of a deterioration in the terms of trade, even though the elasticity conditions is satisfied, for income may fall by more than absorption.

The resource reallocation effect refers to the increase in income as a result of a more efficient allocation of resources induced by devaluation, which operates by shifting resources from low to high-productive sectors. This is likely to occur , it is argued, when the previous exchange rate has been overvalued and at the same time devaluation was accompanied by abolition of trade restrictions .

If there is initially full employment, or if ϕ is equal to, or greater than unity, the major favourable influence of devaluation on the balance of payments must come through its direct effect on absorption. This direct effect is associated with the tendency of the devaluation-induced increase in domestic prices to discourage consumption out of a given level of real income. Here 3 important mechanisms can be identified: the real money balance effect, the money illusion effect, and the income redistribution effect[†].

The real money balance effect and the money illusion effect have already been outlined in the previous section. The income redistribution effect refers to the tendency of rising prices to redistribute incomes in favour of groups with higher marginal propensities to save which reduces

---

[†] For a more detailed discussion of these effects see Alexander, S. (1952) "Effects of a Devaluation on a Trade Balance", IMF Staff Papers April. For an elaboration of the Absorption Approach, see Johnson, H. G. (1953) "Towards a General Theory of the Balance of Payments", in International Trade and Economic Growth, London (Allen and Unwin).

absorption directly. Income tends to be redistributed: in favour of governments at the expense of tax payers, in favour of profits at the expense of wages; and in favour of strong (richer) groups who can defend themselves against rising prices at the expense of weak groups who are generally poor[†].

In addition to this redistribution effect which tends to reduce expenditure, absorption will also be affected by the increase in the domestic price of imports. If the demand for imports is price inelastic there will be more spending in domestic currency on imports while real expenditure on domestic goods will fall[††]. In this case if domestic expenditure on foreign goods exceeds the increased currency value of exports, this might cause income to fall by more than expenditure and hence have an adverse effect on the balance of payments.

There are factors which may counterbalance the direct effects of devaluation on expenditure. The money supply may respond to the increased demand for cash balances so that the real money balance effect may be eliminated or even outweighed by a more than proportionate increase in the money supply in relation to the increase in domestic prices. Similarly, wages may rise by more than prices and expectations about future prices may increase expenditure.

[†] For the income redistributional effects of Devaluation, see Thirlwall, A. P. (1980) Balance-of-Payments Theory and the United Kingdom Experience (Macmillan).

[††] *Ibid.*, pp.102-103.

Devaluation Effects Through Constant Money Supply

It has been mentioned that one of the most important components of the direct effects of devaluation on expenditure is the real money balance effect. In the absorption approach the real balance effect is viewed to operate in conjunction with other devaluation-induced relative price effects. The so-called portfolio models of devaluation dismiss the effects of relative prices and their induced shifts in consumption and production, arguing that devaluation operates chiefly via the real money balance effect. Within such models, where money is considered as net wealth, devaluation can influence the balance of payments only if the nominal money supply is assumed to be held constant by the government. The effects of this assumption have been analysed in the portfolio models due to Dornbusch (1973) and Frenkel and Rodriguez (1975)†.

The basis of the portfolio model is that the level of wealth is held in a desired ratio of cash to other assets. This desired ratio (portfolio equilibrium) is determined by the going rate of interest. Devaluation, by reducing the real value of such a portfolio, causes an adjustment in the rate of absorption relative to income thereby improving the balance of payments. These adjustments can be analysed by means of the portfolio diagram (Figure II.1).

---

† Frekel, D. and Rodriquez, C. (1975) "Portfolio Equilibrium and the Balance of Payments: A Monetary Approach", American Economic Review, 65 No.5, September, pp.674-88. See also, Dornbusch, R. (1973) "Currency Depreciation, Hoarding and Relative Prices", Journal of Political Economy 81, No.4 July/August, pp.893-915.

The figure shows the total value of real assets (A_0) which is divided between real money balances (m) and bond holdings (b). The desired ratio of these holdings is determined by the liquidity ratio function (q) and the rate of interest (i). At point B, given the level of real wealth and the rate of interest, the desired real asset holdings are (b_0) of bonds and (m_0) of money balances. At that point expenditure is equal to income and the economy is in stock equilibrium. To see how devaluation disturbs this equilibrium reference must be made to the effect of devaluation on prices and the real supply and demand functions.

All supply and demand functions are assumed to be homogeneous of degree zero; all consumption goods are assumed to be tradables; and all prices are assumed to increase in proportion to the devaluation. The real demand and supply functions can be expressed as:

$$g = g(P_m, P_T, E) \tag{2.18}$$

$$s = s(P_m, P_T) \tag{2.19}$$

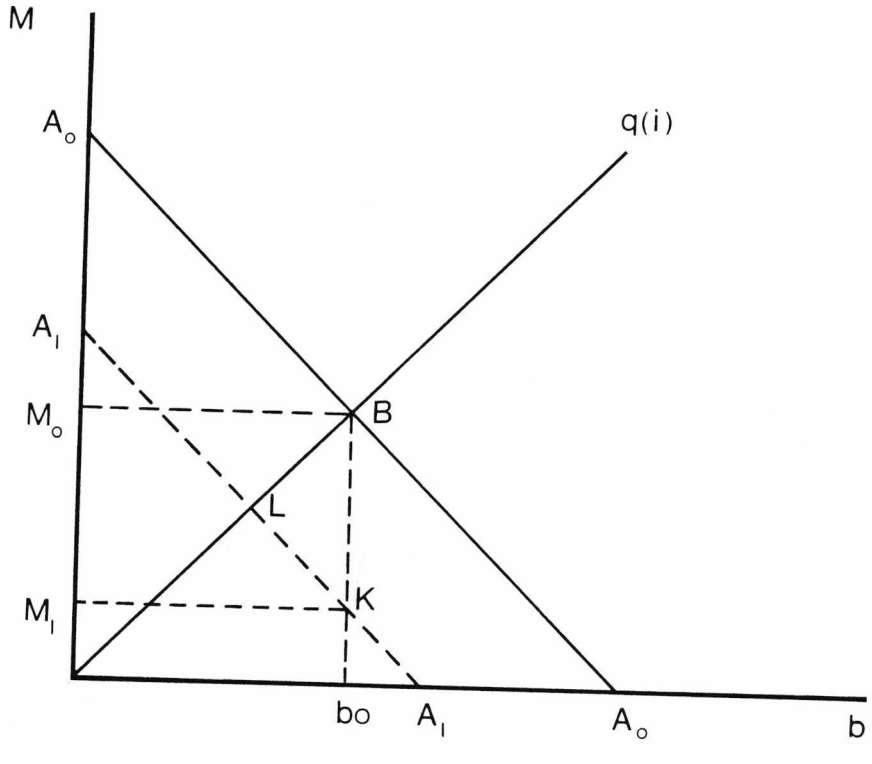
where g is the real demand function, s is the real supply function and all prices are defined as before. Since demand and supply functions are homogeneous of degree zero in all variables, then

$$\lambda^0 g = g(\lambda P_m, \lambda P_T, \lambda E) \tag{2.20}$$

and

$$\lambda^0 s = s(\lambda P_m, \lambda P_T) \tag{2.21}$$

Figure 11-1. The Effect of Devaluation on the Portfolio Model



Since all prices are assumed to increase by the proportion of devaluation, the real domestic supply function will remain constant following devaluation. But the real demand function will remain constant only if nominal expenditure (E) increases in proportion to the devaluation.

As money balances are considered net wealth, the devaluation-induced rise in domestic prices will impose a tax on real cash holdings thereby reducing the level of real wealth. Since nominal expenditure is a function of realwealth, and the price level, nominal expenditure will not increase by the amount of devaluation. Thus, the fall in nominal wealth reduces nominal expenditure relative to nominal income and creates a balance of payments surplus.

The fall in real money balances also disturbs the portfolio equilibrium, requiring an adjustment of the ratio of money to bonds. Real money balances fall from m_0 to m_1 while bond holdings remain at b_0. This fall in real balance reduces real wealth putting the economy on a lower wealth constraint line (A_1-A_1). For portfolio equilibrium to be achieved there must be a movement from point (K) to point (L). This adjustment is assumed to be instantaneous. At point A the country has a current account surplus equal to L-B. Since this current account surplus is viewed as a net accumulation of assets, the wealth constraint line will move outwards in the northeast direction. With the interest rate assumed to be unchanged, and a wealth elasticity equal to unity, there will be no reason for the desired asset ratio to change and the current account surplus will lead to wealth accumulation along the q(i) locus until point B is again reached.

The effect of devaluation is thus to produce a transitory current account surplus which will be gradually eliminated as the reduction in real wealth caused by devaluation is offset. It must be noted that since money is viewed as net wealth, if the government increases the money supply in proportion to the increase in the domestic price level, the economy will move directly from point K to B with no effect on the balance of payments. Note also that a reduction in the nominal quantity of money within such a portfolio model is an alternative policy option which is as good as devaluation. Within the assumptions of the model, reductions in the money supply will have identical implications for portfolio and balance of payment adjustments.

Devaluation Models and the IMF Views

The last section provided a brief discussion of 3 devaluation models. In the elasticity approach, devaluation operates through deterioration in the terms of trade. In the absorption approach the terms of trade effect can go either way, yet, the change in the rate of international to domestic prices induces shifts in production and consumption which directly affects income. Under this approach, if resources are fully employed devaluation will operate chiefly via its direct effect on expenditure. In the portfolio models devaluation is viewed as a pure monetary phenomenon that operates primarily via the real balance effect on absorption. The purpose of this section is to investigate the relevance of these views to those held by the IMF. Here the discussion will be centered around the nature and the importance which the Fund attaches to the mechanisms of relative prices, income redistribution, and real money balances in the adjustment process.

The starting point of this investigation is the Fund view that payments disequilibria are mainly caused by domestic inflation which causes domestic costs to be out of line with those of competitors. A country which is faced with such a deficit is said to face a two-fold policy option: to undertake deflationary policies, or to do that and at the same time to devalue its currency. The Fund adopts the second policy alternative. This is not only because deflationary policies are viewed as costly in terms of output and employment but also because of the downward rigidity of prices which undermines the effectiveness of deflationary policies. The alternative is said to be devaluation supported by anti-inflationary measures[†].

As domestic prices are viewed to be rigid downwards, devaluation is said to be the means to restore relative prices by making the exchange rate compatible with the existent higher level of domestic prices. This amounts to restoring equilibrium to relative prices by raising the domestic currency prices of internationally traded goods rather than by decreasing the prices of domestic goods. This Fund view implies that domestic and foreign traded goods (in local currency) will increase following devaluation. In the extreme case traded goods prices can be assumed to rise in proportion to currency depreciation

$$\dot{P}_T = \dot{P}_m = \dot{R} + \dot{P}_f \qquad (2.22)$$

The adoption of this view eliminates the terms of trade effect. Yet distinction must be made between the effect of devaluation on traded goods prices and that of non-traded goods; for if such a distinction is not

---

† These views are widely expressed by IMF officials. See for example, the address of the IMF Managing Director to the 1978 Euromarkets Conference, London May 8, 1978. Reproduced in the IMF Survey, May 22 1978.

made the relative price effect will also be eliminated. The Fund holds the view that the relative price effect of devaluation operates through deterioration in the internal terms of trade measured as the ratio of domestic non-traded goods to domestic traded goods. In its recent publications the Fund viewed such deterioration in the internal terms of trade as the primary condition for the success of its devaluation policy. As put by 2 IMF writers†:

> " ... *in most cases the success of a stabilization programme can be judged in terms of its effect on the ratio of prices of nontraded goods to those of traded goods. Unlike the external terms of trade which are largely beyond the control of the authorities, this ratio is a key variable that the authorities can influence in attempting to achieve internal and external balance*".

In terms of the IMF programme the authorities can influence this ratio by means of the devaluation-supporting measures. That is, once devaluation increases the domestic prices of traded goods relative to non-traded goods prices, these supporting measures must be invoked so as to eliminate the resultant increase in demand for non-tradables. These measures operate to reduce aggregate demand via the income redistribution effect and the real balance effect.

Under the absorption approach it is the devaluation-induced inflation that redistributes income among the different groups. Under the IMF programme the devaluation-supporting measures generate additional redistributional effects. The elements which give rise to these redistributional effects can be classified into:

---

† Johnson, O. and Salop, J. (1980) "Distributional Aspects of Stabilization Programs in Developing Countries", IMF Staff Papers, Vol.27, March, p.1-23.

(a) those resulting from measures which directly affect particular group activities such as the abolition of subsidies; increases in taxes; dismantling of price controls, and the control of wages; and

(b) those which come indirectly as a result of the curtailment of Bank Credit and the devaluation-induced inflation.

The redistributional effects of the direct measures are not difficult to trace. In less developed countries the goods and services which are subsidised are those mostly consumed by the poorest sections of society. This together with controls over wages erodes the real incomes of the poor. Since the controls of wages, is often imposed on workers in the public sector, this implies a redistribution of income in favour of the government. Similarly, to the extent that the goods which are subject to price controls are produced within the public sector, the abolition of these controls will also redistribute income to the government.

An important factor which determines the distribution of the burden of additional taxes in the IMF programme is the ease with which taxes can be collected. This suggests that the burden of additional taxes will fall heavily on wage and salary earners in the public sector. Since foreign trade taxes are also easy to collect part of this burden will be shared by consumers of imported goods†.

---

† In the case where the IMF programme is aimed at the expansion of exports, it is unlikely that additional taxes will be imposed on exports.

The redistribution effects resulting from the devaluation-induced inflation have already been discussed under the absorption approach. Under the IMF programme where the supportive policies are aimed at preventing the prices of non-traded goods from rising, there will be a heavy income redistribution from wages to profits particularly, if devaluation makes the export sector more profitable. The beneficiaries of such redistribution will be the government (through direct ownership of production entities in the export sector and indirectly through increased export tax reven), the domestic private sector, and foreign-owned firms particularly those engaged in the production of exports.

Finally there is the distribution of productive funds which result from the curtailment of Bank credit. This can be traced by examining the selective credit measures which operate within the overall bank credit ceilings. These include:

(a) direct ceilings on loans to specific users or sectors;

(b) the creation of special lines of credit for certain users; and

(c) different discount rates charged by the Central Bank in discounting paper bills originating in different sectors.

Under such credit ceilings, banks tend to extend their credit to economic agents in the private sector, which secures the maximization of bank profitability of credit funds without incurring additional risks. Besides this profitability aspect, the degree to which different agents in the private sector are affected by the credit ceilings depends also on their ability to raise funds from abroad. These two

considerations indicate that productive funds under the IMF programme are redistributed in favour of well-established firms (mostly multinational companies in the export sector) at the expense of small firms (mostly locally-owned) and in favour of investment projects with a quick capital turnover at the expense of development projects with long gestation periods.

From the discussion above the redistributional effects of the IMF programme can be summed as follows:

(a) redistribution in favour of the government at the expense of wage and salary earners;

(b) redistribution in favour of profits, particularly in the export sector at the expense of wages; and

(c) redistribution of funds in favour of well-established firms, at the expense of small firms, particularly those in the non-traded goods sector.

Another mechanism in the IMF programme which is designed to reduce consumption is the real balance effect. For the real balance effect to operate domestic prices must increase following devaluation. This is not compatible with the Fund's price assumptions. The general domestic level is a weighted average of traded and non-traded goods prices, so that it will rise as a result of devaluation even though non-traded goods prices are kept constant. However, the greater the increase in the general price level, the stronger will be the real money balance effect. If the general price level increased by the full amount of devaluation (which implies that non-traded goods prices also rise by the same amount) there will be no relative price effect while the real balance effect will be at its strongest. The IMF holds the view that the relative price effect and the real money balance effect can

work in concert. This was explicitly stated by an IMF writer .

> *" ... in many respects the usefulness of a devaluation lies in its pervasive effects. In the first place, by raising the price of internatioal goods relative to domestic goods the exhange rate adjustment shifts demand from the former to the latter (expenditure-switching effect). At the same time by reducing the real value of nominal assets, thereby creating an excess in their demand, the devaluation lowers the level of the rate of growth of aggregate demand for goods and services (expenditure-reducing effect) and shifts the flow of spending towards the restoration of the balance in the market for nominal assets"*†.

An IMF Devaluation Model

In the previous section the IMF view of how the effects of devaluation will come about, in the context of its stabilization programme have been discussed. This section integrates those views in an attempt to formulate a model which represents the Fund's present devaluation philosophy.

The model assumes that in the economy there are three goods; domestic traded goods, domestic non-traded goods, and foreign traded goods. There is no market for securities or international capital movements and there is only 1 financial asset - namely domestic money. In such an economy the balance of payments will be equal to the balance of trade and its budget constrained, GNP will be equal to its GDP. The real demand function for goods and services in this economy can be expressed as:

---

† Guitian, M. (1982) *op. cit.*, p.85.

$$g = g(P_m, P_T, P_N, E) \tag{2.23}$$

where P_m is foreign prices in domestic currency, P_T is the price of domestic traded goods, P_N is the price of domestic non-traded goods, and E is nominal expenditure. Devaluation causes the prices of traded goods to adjust according to:

$$\dot{P}_T = \dot{P}_m = \dot{R} \tag{2.24}$$

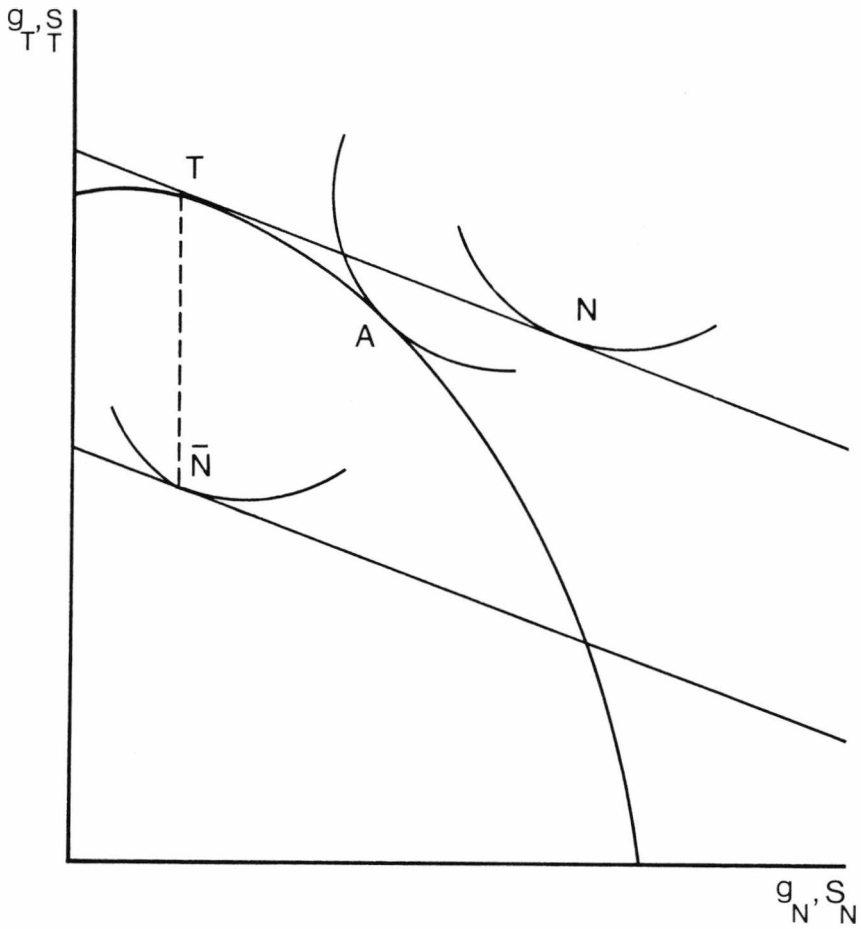
The prices of non-traded goods will not be affected directly by devaluation. The increase in traded goods prices relative to the prices of nontradables (if sustained) will tend to increase the supply of traded goods. This is because of the increased profitability in the traded goods sector relative to the non-traded goods sector. While production will shift to traded goods, demand will shift to non-tradables. The increased demand for non-tradables together with the reduction in their supply, will put upward pressure on their price. This pressure will be reduced by means of the income redistribution and real balance effects on consumption. The increase in the quantity supplied of domestic traded goods coupled with the reduction in the demand for domestic and foreign traded goods will tend to improve the balance of payments.

These effects can be illustrated graphically using Salter's Curve (1959)[†]. In the absence of capital transactions the transformation curve represents total domestic production as well as the country's budget

---

[†] Salter, W. E. (1959) "Internal and External Balance: The Role of Price and Expenditure Effects", Economic Record, 35, August.

Figure 11-2: Supply and Demand for Traded and Non-Traded Goods (Salter's Graph)



constraint (Figure II.2). At point A the economy is in equilibrium where domestic demand is equal to domestic supply. Devaluation will tend to increase the supply of traded goods (this is represented by a shift towards point T) and increase the demand for non-tradables represented by a shift towards point N.

If the demand-restraint measures are effective, demand will be reduced by $N-\bar{N}$ in terms of tradables. At point $\bar{N}$ the demand for non-tradables is equal to their supply. This reduced consumption will also result in an increased supply of traded goods equal to $\bar{N}-T$. This amount is equal to the balance of payments surplus.

If the demand restraint measures are not effective, the induced relative price change will be eroded by subsequent increases in the price of non-traded goods. In this case, there will be no incentive for increasing the production of exportables so that supply will tend to fall back to point A. However, if the domestic money supply is kept constant domestic consumption will not increase to its pre-devaluation level (point A) because of the real balance effect on expenditure. The new level of demand, and hence the magnitude of the balance of payments surplus, will depend on the strength of the real balance effect. If the money supply is increased in proportion to devaluation the only remaining impact will be the redistribution effect of the ensuing inflation and the economy will tend to move back to point A.

Given the assumptions of this model, its results depends heavily on the behaviour of relative prices following devaluation and its success

rests crucially on the effectiveness of the deflationary measures including the government's monetary policy. However, the restrain-cum-depreciation mechanism may not operate as assumed above. Devaluation may cause the prices of foreign traded goods (in domestic currency) to increase by more than that of domestic traded goods resulting in a deterioration in the barter terms of trade. If the demand for exports and imports are inelastic expenditure on imports in domestic currency will exceed the increased value of exports (measured in domestic currency). This will have unfavourable effects on the balance of payments directly (and indirectly by reducing real expenditure on domestic goods) which might cause domestic income to fall by more than absorption.

Furthermore, domestic prices of nontraded goods may rise by more than in proportion to devaluation, turning the relative price advantage devaluation is designed to achieve into disadvantage, thereby discouraging exports instead of encouraging them. Even if it is assumed that the devaluation-supporting measures will successfully eliminate the upward pressure on domestic prices, export supply might not respond to the relative price signals because of the structural rigidities in production patterns which characterize many of the less developed countries. Additionally, if devaluation was successful in increasing the production of tradables, this does not automatically result in an increase in the actual supply of exports, for the latter requires an increase in the efficiency of transportation and other export-servicing facilities. Devaluation is too blunt an instrument to ensure the simultaneous promotion of export production and the necessary export-servicing facilities which enable the transformation of the increased production into foreign exchange proceeds.

Also the devaluation-supporting deflationary measures might cause domestic income to fall by more than absorption thereby worsening the balance of payments rather than improving it. The increased profits as a result of the induced income redistribution, may be regarded as windfall profits which might encourage imports of luxury goods rather than reinvestments. Similarly, the redistribution of income in favour of foreign-owned firms in the export sector may simply lead to profit repatriation.

Moreover, if the tax elasticity of nominal income is low, and if there is a long time lag in tax collection, the devaluation-induced inflation may cause government expenditure to rise by more than government revenue resulting in wider government deficits. This might lead to increased government borrowing from the banking system. The resultant expansion in domestic credit might lead to higher domestic prices, wider government deficits, and further expansion in credit. This self-generating mechanism might result not only in forcing the government to exceed the monetary and fiscal ceilings set by the programme, but in wider government deficits and faster monetary growth than that during the pre-programme period.

In short, the IMF devaluation policy which is designed to achieve balance of payments improvement and higher growth rate propelled by export expansion in an environment of price stability might result in exactly the opposite: reduced export value, increased import value, a worse balance of payments, a fall in the rate of growth of output, and higher domestic inflation. These issues will be tested empirically in the following chapters.

CHAPTER THREE

THE EFFECT OF DEVALUATION ON DOMESTIC PRICES AND REAL WAGES: THE EXPERIENCE OF SOME DEVELOPING COUNTRIES

Introduction

A typical argument for an IMF-imposed devaluation is that the country's exchange rate is overvalued, making goods and services uncompetitive. The overvalued exchange rate is said to be the result of domestic inflation, which under fixed exchange rates, would make the production of home goods more attractive relative to the production of tradables and the consumption of traded goods less expensive relative to the consumption of home goods. Hence, as domestic inflation proceeds a chronic deficit would result. One cure for such a deficit, in the view of the IMF, is to impose a devaluation to restore the competitive-position of the country and hence improve its balance of payments.

But devaluation may generate domestic inflation, which tends to nullify the competitive price advantage that devaluation is designed to achieve. The devaluation-induced increase in import prices may drive up domestic prices and this may stimulate demand for higher wages, which in turn may raise domestic money costs, and hence, domestic prices, and so on. Also, the existence of some structural rigidities may make it difficult to increase output so as to meet the increased demand for tradable products. A rise in the demand for home products coupled with supply shortages may lead to further increases in domestic prices which may offset any possible benefits of currency devaluation.

The purpose of this chapter is to provide some empirical analysis of the effects of devaluation on prices and wages, taking a sample of 12 developing countries. A two-equation model is used. The model is designed to estimate 3 effects of an exchange rate change:

(a) the effect of a change in import prices on domestic prices;

(b) the effect of this initial change in domestic prices on money wages; and

(c) the effect of this change in turn on domestic prices, plus any subsequent round effects on the wage rate, and domestic prices.

The Model

The model is based on two basic wage and price equations which can be written as:

$$\overset{*}{W} = \gamma_0 + \gamma_1 U + \gamma_2 \overset{*}{P}_D \qquad \gamma_1<0 \ , \ \gamma_2>0 \qquad (3.1)$$

$$\overset{*}{P}_D = b_0 + b_1 \overset{*}{W} + b_2 \overset{*}{Q} + b_3 \overset{*}{P}_m \qquad b_2<0 \ , \ b_1, b_3>0 \qquad (3.2)$$

where, $\overset{*}{W}$, $\overset{*}{P}_D$ and $\overset{*}{P}_m$ are the rates of change in the money wage rate, domestic prices, and import prices respectively. U is the percentage level of unemployment and $\overset{*}{Q}$ is the rate of productivity growth.

The derivation of the wage equation (3.1), which is based on the Phillips curve, is widely discussed in the literature. Here it must be mentioned that the equation is based on two related hypotheses: that the change in wages is a function of the excess demand for labour and that there exists a linear relationship between the excess demand for labour and the unemployment rate.

The price equation (3.2) is derived from the cost identity that relates the market value of the final output to the value of measured costs (costs of labour and imported materials), the value of unmeasured costs (costs of capital and domestic factors of production), and the residual profits, all expressed as amounts per unit of output†. That is:

$$P_D = WL + P_mT + PC + S \qquad (3.3)$$

where P_D is the market price of final output, W is wage rate per unit of labour, L is the quantity of labour used per unit of output, P_m is the price per unit of imported materials, T is the quantity of imports per unit of output, P is the price of unmeasured costs, C is the quantity of unmeasured inputs per unit of output, and S is the profit per unit of output.

For equation (3.3) to be transformed into an ex-ante price decision function, which in turn yields the equation used in the model, the following assumptions are made. First, the quantity of imported inputs per unit of output is assumed to be constant. Second, unmeasured costs are assumed to be a constant function of measured costs, i.e. $PC=F(WL+P_mT)$. Third, producers are assumed to set their prices by applying a constant mark-up on costs (n) and hence their profit per unit of output is equal

---

† This derivation is presented in Lipsey, R. G. and Parkin, J. M. (1970) "Incomes Policy: A Re-Appraisal" Economica, Vol.37, May.

$S=n(WL+P_mT+PC)$. Employing these 3 assumptions, equation (3.3) is transformed into:

$$P_D = \frac{1+F}{1-n}(WL+P_mT) \tag{3.4}$$

where F , n and T are constants. Differentiating equation (3.4) with respect to time (indicated by a dot), dividing the resultant equation by P_D , and multiplying the terms on the right-hand-side by L/L , W/W and P_m/P_m respectively yields:

$$\dot{P}_D/P_D = \left(\frac{1+F}{1-n}\right)\left(\frac{\dot{W}WL}{P_DW}\right) + \left(\frac{1+F}{1-n}\right)\left(\frac{\dot{L}WL}{P_DL}\right) + \left(\frac{1+F}{1-n}\right)\left(\frac{\dot{P}_mTP_m}{P_DP_m}\right) \tag{3.5}$$

Replacing the proportionate change in the quantity of labour per unit of output ($=\dot{L}/L$) by $-\dot{Q}/Q$ (= minus the proportionate rate of change of output per head), and using "*" to represent proportionate rate of change (e.g., $\dot{P}_D/P_D=\overset{*}{P}_D$) , we have:

$$\overset{*}{P}_D = \left[\left(\frac{1+F}{1-n}\right)\frac{WL}{P_D}\right]\overset{*}{W} - \left[\left(\frac{1+F}{1-n}\right)\frac{WL}{P_D}\right]\overset{*}{Q} + \left[\left(\frac{1+F}{1-n}\right)\frac{P_mT}{P_D}\right]\overset{*}{P}_m \tag{3.6}$$

which for simplicity can be written as[†]:

$$\overset{*}{P}_D = b_1\overset{*}{W} + b_2\overset{*}{Q} + b_3\overset{*}{P}_m \qquad (3.7)$$

Equation (3.7) is the same as equation (3.2) with the constant set to zero. In the light of equation (3.6), equation (3.2) is subject to two additional constraints: the coefficient on $\overset{*}{Q}$ should be equal and opposite in sign to the coefficient on $\overset{*}{W}$, and the coefficients on $\overset{*}{W}$ and $\overset{*}{P}_m$ should be equal to the respective shares of wage costs and imported inputs costs in the final price, times the factor (1+F)/(1-n). If n (the mark-up percentage) and F (the ratio of measured costs to unmeasured costs) are very small, then $[(1+F/1-n)\ P_mT/P_D] \rightarrow P_mT/P_D$ and $[(1+F)/(1-n)\ WL/P_D] \rightarrow WL/P_D$; and the coefficient on $\overset{*}{P}_m$ would assume a value close to the share of import costs in the final price and the coefficient on $\overset{*}{W}$ assume a value close to the share of wage costs in the final price.

The Effect of Devaluation on Domestic Prices and Wages

To trace how changes in the exchange rate would affect domestic prices and wages, consider first the relationship between the change

[†]A similar price equation can be derived by making the average price of final output equal to the sum of wage costs, profits, and import costs per unit of output. This derivation gives a final equation of the form: $\overset{*}{P}_D = b_1\overset{*}{W} + b_2\overset{*}{\pi} + b_3\overset{*}{P}_m$, where all the variables are defined as before, $\overset{*}{\pi}$ is the rate of change of profits and b_1, b_2 and b_3 are the proportional shares of wage costs, profits and import costs in the final price of output, respectively. For this derivation see Thirlwall, A. P. (1980) *op. cit.*

in the exchange rate and changes in import prices in domestic currency. This relationship is termed the "pass-through" on the side of imports, which is defined as the extent to which exchange rate changes are transformed into higher import prices in domestic currency. The relationship between exchange rate changes and import prices is given by:

$$\overset{*}{P}_m = \overset{*}{R} + \overset{*}{P}_f \qquad (3.8)$$

where R is the exchange rate expressed in home currency per unit of foreign currency, P_f is the foreign price of imports, and P_m is defined as before. Dividing through by $\overset{*}{R}$, gives:

$$\overset{*}{P}_m/\overset{*}{R} = (1+\overset{*}{P}_f/\overset{*}{R}) = K_m \qquad (3.9)$$

where K_m measures the degree of pass-through on the side of imports. Equation (3.9) can be written as

$$\overset{*}{P}_m = \overset{*}{R}\, K_m \qquad (3.10)$$

Equation (3.10) asserts that the change in a country's import prices in domestic currency is some fraction of the change in the exchange rate relative to its trading partners. Branson (1972) has shown that $K_m = (1-D_m/S_m)^{-1}$ where D_m and S_m are the own-price elasticity of demand for and supply of imports respectively. As can be seen from equation (3.9), K_m will be unity if $\overset{*}{P}_f/\overset{*}{R}$ is equal to zero and this will be the

case if

(a) suppliers do not alter the foreign supply price of imports;

(b) other countries do not alter their exchange rates; and

(c) either the own-price elasticity of demand for imports is zero or the own-price elasticity of supply of imports is infinite[†].

Let us consider now the relationship between the change in the exchange rate and the change in domestic prices. This relationship depends on two factors: first the extent to which the exchange rate change is transformed into changes in import prices in domestic currency (K_m), and second, the effect of import price changes on domestic prices. That is:

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = K_m \left(\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{P}_m}\right) \tag{3.11}$$

From equation (3.2) the effect of import price changes on domestic price changes can be obtained as:

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{P}_m} = b_3 \tag{3.12}$$

where b_3 is the coefficient on $\overset{*}{P}_m$ from the price equation (3.2). Substituting (3.12) into (3.11), the relationship between exchange rate

---

[†] See Thirlwall (1980) *op. cit.*, p.87.

change and domestic price change is obtained:

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = K_m \, b_3 \qquad (3.13)$$

Equation (3.13) shows the short-run effect of a change in the exchange rate on domestic prices where wage rate changes may be regarded as exogenous[†]. The long-run effect should include the effect of domestic price change on money wage changes and the subsequent round effects of money wage changes on domestic prices. The long-run effect is given by:

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = K_m \left[\frac{b_3}{1-\gamma_2 b_1}\right] \qquad (3.14)$$

where γ_2 and b_1 are the coefficients on $\overset{*}{P}_D$ and $\overset{*}{W}$ from equations (3.1) and (3.2) respectively. Equation (3.14) states that the long-run effect of exchange rate change on domestic prices depends positively on

(a) the degree of pass-through (K_m);

(b) the effect of a change in import prices on domestic prices (b_3);

(c) the effect of a change in domestic prices on money wages (γ_2); and

(d) the effect of money wage rate changes on domestic prices (b_1).

[†] Goldstein, M. (1974) "The Effect of Exchange Rate Changes on Wages and Prices in the U.K.: An Empirical Study", IMF Staff Papers, November.

Examining equation (3.13) and (3.14) it is clear that the long-run effect will be greater than the short-run effect by the factor $(1/(1-\gamma_2 b_1)$ assuming $0<\gamma_2$ and $b_1<1$.

The usual argument for the use of devaluation is that it will improve price competitiveness by reducing the foreign exchange price of domestically produced goods. This will depend on the effect of devaluation on domestic prices and,in particular on the price of exportables. If the price of exportables in domestic currency increased by the full amount of the devaluation such a price advantage would be eroded. On the assumption that domestic prices and the price of exportables in domestic currency increase in the same proportion following devaluation, the wage-price model can be used to calculate how much of the competitive price advantage initially given by devaluation will be retained - after the induced price and wage effects have run their course. The "proportion" of the initial price advantage achieved by devaluation that is retained is given by:

$$\frac{\frac{\partial \overset{*}{P}_m}{\partial \overset{*}{R}} - \frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}}}{\frac{\partial \overset{*}{P}_m}{\partial \overset{*}{R}}} = \left[1 - \left(\frac{b_3}{1-\gamma_2 b_1}\right)\right] \qquad (3.15)$$

If, for example, domestic prices increased by the same amount as the rise in import prices in domestic currency, $b_3/(1-\gamma_2 b_1)$ would be equal to unity and equation (3.15) would be equal to zero, which implies that none of the competitive price advantage provided by devaluation would be retained.

The model can also be used to estimate the effect of an exchange rate movement on real wages. One of the arguments for devaluation is that in countries where money wages are inflexible downwards, devaluation, by increasing domestic prices is a means of cutting real wages. For this to be the case, the money wage response to domestic price increases must be less than in proportion, i.e. $\gamma_2 < 1$.

To measure the change in money wages, solve equation (3.1) and (3.2) for $\overset{*}{W}$, that is:

$$\overset{*}{W} = C + \frac{(\gamma_2 b_3)\ \overset{*}{P}_m}{(1-\gamma_2 b_1)} \tag{3.16}$$

where

$$C = \frac{\gamma_0+\gamma_2 b_0+\gamma_1 U+\gamma_2 b_2 \overset{*}{Q}}{(1-\gamma_2 b_1)} \tag{3.17}$$

Using the equations (3.10) and (3.17) the effect of exchange rate change on money wages is given by

$$\frac{\partial \overset{*}{W}}{\partial \overset{*}{R}} = \frac{\partial \overset{*}{W}}{\partial \overset{*}{P}_m} \cdot \frac{\partial \overset{*}{P}_m}{\partial \overset{*}{R}} = \frac{\gamma_2\ b_3}{(1-\gamma_2 b_1)} \cdot K_m \tag{3.18}$$

The effect of devaluation on real wages is obtained by subtracting equation (3.14) from equation (3.18):

$$\frac{\partial \overset{*}{W}}{\partial \overset{*}{R}} - \frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = \left[\frac{K_m\ b_3}{(1-\gamma_2 b_1)}\right] (\gamma_2 - 1) \tag{3.19}$$

From equation (3.19) it is clear that real wages will fall following devaluation as long as γ_2 is less than unity.

Regarding the wage-price model discussed above one remaining point must be made. This concerns the choice of estimating procedure. Ideally the model ought to be estimated using a simultaneous equation estimator such as two stage least squares. However, specification and data problems made it difficult to use such an estimator. That is, if all the variables in the two equation model, except $\overset{*}{P}_D$ and $\overset{*}{W}$, are treated as exogenous and the only exogenous variables in the system, two stage least squares, could be used. Yet such two stage least squares would depend on the assumption that U and $\overset{*}{Q}$ are exogenous. Following Lipsey and Parkin (1970) it seems more reasonable to suppose that $\overset{*}{P}_D$ and $\overset{*}{W}$ together with U and $\overset{*}{Q}$ are jointly determined endogenous variables - the value of which depend on exogenous variables such as government expenditure, taxes, exports, and a large number of other exogenous and pre-determined variables[†]. To obtain the two stage least-squares estimates of the coefficients in the wage-price equation would require:

(a) that we specify a complete macro model; and

(b) that data are available for each variable in this model.

Hence, two-stage least squares estimators are not available to us[††]. It follows even more strongly that other simultaneous-equation estimators could not be used.

[†] Lipsey and Parkin (1970) *op. cit.*, p.127.

[††] Also, most previous estimates of the model have indicated that two-stage least squares estimates (on the assumption that $\overset{*}{P}_D$ and $\overset{*}{W}$ are the only endogenous variables in the system), and ordinary least squares estimates are quite similar, indicating that the simultaneous bias is very small. For this evidence see Goldstein, M. (1972) "The Trade Off Between Inflation and Unemployment: A Survey of the Econometric Evidence of Selected Countries", IMF Staff Papers, Vol.19, November.

Data and Measurement of Variables

The time series data required to estimate equations (3.1) and (3.2) are difficult to find for most developing countries, especially on wage rates, and unemployment. Even the available data are poor in nature and quality. In 7 out of 12 countries under investigation quarterly data are available for all the variables of the model. These countries are Mexico, Ghana, the Phillipines, Zaire , Srilanka and Guyana (hereafter referred to as Sample 1). For the remaining 5 countries namely Sudan, Ecuador, Jamaica, Turkey and Peru, only annual data are available (Sample 2) .

In the price equation, for the countries in Sample I, the proportionate changes in the variables are measured as overlapping 4-quarter averages. For example: $\overset{*}{P}_m=(P_{m_t}-P_{m_{t-4}})/P_{m_{t-4}}$. Here some limited experimentation was carried out to determine the most appropriate lag for the explanatory variables. For the countries in Sample 2, the proportionate changes in the variables are measured as annual changes. For example: $\overset{*}{P}_m=(P_{m_t}-P_{m_{t-1}})/P_{m_{t-1}}$ where P_{m_t} and $P_{m_{t-1}}$ are import prices in the current, and previous year respectively.

In the wage equation, for the countriesin Sample 1, the dependent variable $\overset{*}{W}$ is also measured as overlapping 4-quarter changes. This measurement is common to most empirical wage studies and it is based on the twin assumption that wage adjustments are made once every 4 quarters and that one-fourth of the adjustment is made each quarter. Although such a measurement is convenient to deal with the discrete nature of wage adjustment, it has two disadvantages. If the above

assumptions are not met the wage equation may give poor results for at least some time periods. Second, the 4-quarter formulation may introduce artificial autocorrelation in the wage equation which may introduce a downward bias in the standard errors of the estimated coefficients[†].

The excess demand for labour is measured as a 5-quarter average of the unemployment rate. That is $U=(U_t+U_{t-1}+U_{t-2}+U_{t-3}+U_{t-4})/5$. By specifying the unemployment rate in this manner, both the wage change variable ($\overset{*}{W}$) and the unemployment rate variable (U) will be centered on the second quarter and unemployment will affect wages without a lag[††]. For the countries in Sample 2 the wage variable is measured as the annual percentage change, while the unemployment variable is represented by the annual percentage rate of unemployment.

The Effect of Import Price Changes on Domestic Prices

Before examining the effect of a change in import prices on domestic prices an attempt was made to determine the appropriate lag between the change in import prices and domestic prices. This test was performed for the countries in Sample 1. To do this equation (3.2) was estimated for each country in the sample using different time lags on $\overset{*}{P}_m$. Discrete lags on $\overset{*}{P}_m$ ranging from zero to six quarters were tried. It was found that a one quarter lag gives the best results. Accordingly, the price equation was estimated with one quarter lag on $\overset{*}{P}_m$

[†] See Goldstein (1974) *op. cit.*, p.713-719.

[††] *Ibid.*

for the countries in Sample 1. In Sample 2, the price equation was estimated with no lag on $\overset{*}{P}_m$.

The results of the estimated price equations for Sample 1 and 2 are given in Table III.1. For each country the table shows the estimated coefficients, their t ratios, the coefficient of determination, and the Durbin-Watson statistics. For each country the period of estimation covers some years before devaluation and two or more years after. The choice of these time periods was governed by the availability of data.

Examining first the results of Sample I, the coefficient of determination (R^2) is significant at the 95% level in all countries with the exception of The Phillipines. In all countries, with the exception of The Phillipines, the coefficient on $\overset{*}{W}$ is positive and significant at the 95% level. The coefficient on $\overset{*}{Q}$ has the expected negative sign in all countries, but it is only significant in 4 countries, namely Mexico, Zaire, Srilanka and Pakistan. The coefficient on $\overset{*}{P}_m$ is positive and significant in all cases.

Turning now to the results of Sample 2 , the coefficient of determination is significant in all cases. The coefficient on $\overset{*}{W}$ has the expected positive sign in all cases, but it is positive and significant in only 4 cases: Peru, Ecuador, Jamaica and Turkey. The coefficient on $\overset{*}{Q}$ is negative and significant in the case of Peru, Ecuador and Turkey. The coefficient on $\overset{*}{P}_m$ is positive and significant in all cases.

Table III.1: The Relationship Between Import and Domestic Price Changes

Country	Time Period	b_0	b_1	b_2	b_3	R^2	DW
				(Sample 1: Quarterly Data)			
Mexico	1960-79	0.005	0.041	-0.024	0.629	0.84	2.06
		(1.78)	(1.83)	(-2.06)	(4.05)		
Ghana	1957-71	-0.001	0.043	-0.143	0.567	0.91	2.29
		(-0.031)	(2.06)	(-0.85)	(1.62)		
Philippines	1960-74	0.004	0.403	-0.204	0.496	0.48	1.71
		(0.70)	(1.55)	(-1.01)	(2.42)		
Pakistan	1961-75	0.005	0.099	-0.137	0.617	0.63	2.20
		(1.93)	(2.00)	(-2.89)	(6.88)		
Guyana	1960-74	0.101	0.112	-0.398	0.579	0.72	2.24
		(1.37)	(2.67)	(-0.79)	(.893)		
Srilanka	1957-71	0.001	0.269	-0.113	0.575	0.86	2.96
		(2.50)	(3.51)	(-2.45)	(10.36)		
Zaire	1974-80	0.012	0.481	-0.396	0.685	0.94	1.83
		(1.50)	(2.68)	(-4.93)	(2.16)		
				(Sample 2: Annual Data)			
Ecuador	1965-80	-0.038	0.687	-0.626	0.467	0.83	1.70
		(-1.72)	(5.20)	(-1.69)	(7.22)		
Jamaica	1963-80	-0.145	0.486	0.373	0.490	0.73	1.92
		(-0.88)	(2.57)	(2.09)	(2.24)		
Sudan	1966-80	-0.037	0.56	0.298	0.48	0.82	2.63
		(-1.70)	(1.60)	(3.11)	(3.63)		
Turkey	1961-80	0.279	0.408	-0.520	0.38	0.94	1.63
		(1.45)	(2.99)	(-3.20)	(5.11)		
Peru	1950-68	0.271	0.465	-1.561	0.56	0.59	1.39
		(3.99)	(1.94)	(-2.06)	(2.32)		

Numbers in parenthesis below coefficients are t statistics

As was noted before the price equation is subject to the theoretical constraint that, the coefficient on $\overset{*}{Q}$ (b_2), should be equal to the negative of the coefficient on $\overset{*}{W}$ (b_1), and the constant term should be equal to zero. In the light of our estimated price equations, a linear test can be used to see whether $b_1=-b_2$ [†]. The second constraint, namely the constant term is equal to zero, can be verified by examining the statistical significance of the constant term.

When these tests were conducted the results revealed that b_1 and b_2 are of equal absolute value in 7 countries. In 5, Mexico, Jamaica, Sudan, Turkey and Peru, they are not. The constant is not significantly different from zero at the 95% level in all cases but 3: Srilanka, Turkey, and Peru. Altogether therefore, only 5 countries in the sample fully satisfy these two constraints.

There is also the constraint that the coefficients b_1 and b_3 must be equal to the share of wage and import costs in the final price times the factor $(1+F)/(1-n)$. Although this constraint cannot be tested directly from the estimated equations, a comparison between the magnitudes of $\hat{b}_1$ and $\hat{b}_3$ gives an idea about the relative shares of wages and imports in the final price. In all countries but 3, $\hat{b}_3$ is substantially larger than $\hat{b}_1$ implying that the cost of imports has a larger share in the final price of output than that of wages.

---

† The linear test used here is to test the null hypothesis $H_0: \hat{b}_2+\hat{b}_1=\text{zero}$ against the alternative hypothesis $H_1: \hat{b}_1+\hat{b}_2\neq\text{zero}$. These hypothesis were tested using the formula:

$$\bar{t} = \frac{(\hat{b}_1+\hat{b}_2)}{\sqrt{\text{var}(\hat{b}_1)+\text{var}(\hat{b}_2).2\text{cov}(\hat{b}_1\hat{b}_2)}}$$

the observed $\bar{t}$ values obtained from the above formula are then compared with the (tabular) t values which define the critical region in a 2-tailed test.

Given the estimated price equation shown in Table III.1, the effect of import prices on domestic prices is given by the estimated coefficient on $\overset{*}{P}_m$, i.e. $\hat{b}_3$. Taking sample 1 as a whole, a 1% change in import prices is associated, on average, with about a 0.59% change in domestic prices. The largest effect of import prices on domestic prices, is registered by Zaire where a 1% change in import prices is associated with a 0.69% change in domestic prices, and the smallest is recorded by The Philippines where it is associated with a 0.50% change in domestic prices.

Taking Sample 2 as a whole, a 1% change in import prices is associated, on average, with a 0.48% change in domestic prices. Here the smallest effect is recorded by Turkey where a 1% change in import prices is associated with a 0.38% change in domestic prices, while the largest effect is recorded by Peru where it leads to a 0.56% change in domestic prices.

Devaluation and the Announcement Effect on Domestic Prices

An argument which is often made with respect to currency devaluation is that expectations of currency devaluation create an inflationary psychology in the economy such that domestic prices rise by more than otherwise would be the case, even when the effect of devaluation on domestic prices through import prices is taken into account.

To test for such an "announcement" effect, the price equation was estimated with 2 shift dummy variables. The first is a shift dummy for the year of devaluation which takes a value of unity during the year

of devaluation and a value of zero elsewhere. The second is a shift dummy for all the years after devaluation included in the estimation period. To clarify this procedure, consider Mexico as an example where the equation was estimated for the period (1960-79) with 2 dummy variables: the announcement dummy (AN76)(where 76 denotes the year of devaluation) (which was included for the period 1976:III to 77:III) and a shift dummy (D7679) for the whole 1976-79 period. If the slope of the $\overset{*}{P}_D - \overset{*}{P}_m$ relationship increases during the 1976-79 period, the coefficient on D7679 would be positive and statistically significant. If the announcement effect is operative the announcement dummy (AN76) would be positive and statistically significant.

Table III.2 shows that the announcement dummy is positive in 4 countries: they are Ghana, Guyana, Sudan and Jamaica. However, it is positive and significant at the 95% level only in the case of Jamaica. The estimated announcement dummy for Jamaica suggests that after the 1978 devaluation of the Jamaican dollar, domestic price changes were 0.12% points higher than would otherwise have been expected, even after accounting for the upward shift in the price equation over the period (1978-80). In the other 3 countries where the announcement dummy is positive but not significant, the recorded size of the upward shift is very small, not exceeding 0.01% points. In all other countries the announcement dummy is negative.

According to these results there is no evidence to support the announcement hypothesis. On the contrary the results suggest that, during the first year after devaluation, domestic price charges tend

Table III.2: The Announcement Effect of Devaluation on Domestic Prices

Country	b_0	b_1	b_2	b_3	ANi	Di	R^2	DW
					Sample 1			
Mexico	0.854	0.004	-0.046	0.649	0.011(AN76)	-0.854(D7671)	0.84	2.34
	(0.55)	(0.13)	(-1.40)	(4.12)	(2.03)	(-0.001)		
Ghana	-0.004	0.028	-0.016	0.562	0.001(AN67)	0.006(D6871)	0.64	2.04
	(-0.34)	(0.93)	(-0.26)	(8.68)	(0.11)	(0.50)		
Philippines	0.002	-0.115)	0.0362	0.486	-0.008(AN70)	0.003(D7174)	0.64	2.14
	(0.46)	(-1.06)	(1.18)	(9.14)	(-0.16)	(0.97)		
Pakistan	0.001	0.007	-0.068	0.434	-0.006(AN72)	0.012(D7375)	0.50	2.51
	(o.50)	(0.09)	(-0.75)	(4.67)	(-1.14)	(2.15)		
Guyana	0.005	-0.003	-0.006	0.568	0.001(AN70)	0.001(D7174)	0.73	2.28
	(0.40)	(-0.16)	(-1.16)	(8.04)	(0.70)	(0.083)		
Srilanka	0.003	-0.002	-0.004	0.767	-0.008(AN67)	0.008(D6871)	0.19	1.94
	(2.96)	(-0.28)	(-0.20)	(0.65)	(-2.82)	(3.28)		
Zaire	0.015	0.41	-0.419	0.550	-0.243(AN76)	0.005(D7680)	0.94	2.00
	(2.14)	(3.19)	(-6.59)	(2.27)	(-1.43)	(0.37)		
					Sample 2			
Ecuador	0.038	0.006	0.026	0.321	-0.068(AN67)	0.070(D6871)	0.78	1.67
	(2.21)	(0.06)	(0.13)	(2.70)	(-2.04)	(4.25)		
Jamaica	0.078	0.559	1.137	0.479	0.122(AN78)	0.022(D7980)	0.92	1.54
	(-4.07)	(4.83)	(5.42)	(5.64)	(2.00)	(0.63)		
Sudan	-0.057	0.468	0.337	0.227	0.008(AN78)	0.159(D7980)	0.90	2.53
	(-2.59)	(4.48)	(2.50)	(2.43)	(0.127)	(5.86)		
Turkey	-0.001	0.051	0.057	0.462	-0.113(AN74)	0.077(D7578)	0.99	2.02
	(-0.09)	(0.69)	(0.65)	(15.78)	(-3.28)	(3.48)		
Peru	0.112	-0.162	-7.23	0.210	-0.023(AN67)	0.0238(D6875)	0.85	1.77
	(0.44)	(-1.23)	(-0.94)	(1.62)	(-0.25)	(0.41)		

to be lower than would otherwise be expected. A possible explanation for this is that the dummy variable included in the price equation (to capture the announcement) effect may be capturing the effect of the deflationary policies which always accompany an IMF-imposed devaluation. If this is the case, and if the announcement effect is also operative, then a negative announcement coefficient, (ANi), suggests that the downward shift in the price equation caused by these deflationary policies outweights the upward shift caused by the announcement effect. Accepting this line of reasoning, the accompanying deflationary policies can be said to have caused domestic price changes to be lower than would have been expected even when the announcement effect is taken into account in the case of The Philippines, Pakistan, Srilanka, Zaire, Turkey and Peru. Here the largest effects were recorded by Zaire and Turkey, where the change in domestic prices was 0.24 and 0.11% points lower than otherwise would have been expected.

The Effect of Domestic Price Changes on Money Wages

In the previous sections it was shown how changes in import prices influence changes in domestic prices. This induced change in domestic price may create a chain of wage-price increases as producers and workers attempt to keep their real incomes intact. The coefficient $\hat{b}_3$ in the estimated price equation measures the effect of money wage changes on domestic price changes. Here the wage equation is estimated to obtain a measure of the effect of domestic price changes on wages (γ_2) .

The wage equation is estimated for the 12 countries in Samples 1 and 2. The estimation time period for each country is the same as that for the price equation. The estimated wage equations are shown in Table III.3. In the first 7 equations (Sample 1), the R^2 is significant at the 95% level in all cases. The coefficient on U, has the expected negative sign in all countries, and it is negative and significant at the 95% level in all countries but Pakistan. The coefficient on $\overset{*}{P}_D$ has the expected positive sign in all 7 countries and it is significant in all countries, but Ghana. For the countries with annual data the R^2 is statistically significant except in the case of Peru and Turkey. The coefficient on $\overset{*}{P}_D$ is positive and significant in all cases but Peru.

The magnitude of the wage response to price changes is measured by γ_2 in the estimated wage equations. An examination of the values of this coefficient reveals that the wage response to price changes is very damped for the majority of the countries. In Mexico and Pakistan for example, a 1% change in domestic price is apparently associated with no more than a 0.02% change in money wages. In Srilanka, Ghana, The Philippines, Guyana, Zaire and Peru a 1% change in domestic prices is associated with not more than a 0.36% rise in money wages. And in the case of Jamaica, Ecuador and Turkey it is associated with a 1.25, 0.46 and 0.56% increase in money wages respectively.

It must be recalled that these estimates are based on the assumption that the adjustment of money wages to domestic price change takes place within the same quarter for the countries in Sample 1, and within the same year for the countries in Sample 2, to the extent that the adjustment time lag is longer than assumed this result might underestimate the wage response to price changes.

Table III.3: The Effect of Domestic Price Change on Money Wages

Country	λ_0	λ_1	λ_2	R^2	DW
		(Sample 1: Quarterly Data)			
Mexico	2.20 (5.59)	-0.230 (-6.85)	0.01 (11.25)	0.73	1.77
Ghana	1.24 (2.22)	-0.009 (-2.20	0.358 (1.90)	0.80	1.87
Philippines	0.226 (6.49)	-0.001 (-6.33)	0.290 (2.45)	0.70	1.98
Pakistan	-0.079 (-0.46)	-0.001 (-0.54)	0.003 (3.66)	0.84	1.73
Guyana	0.086 (4.75)	-0.302 (-2.08)	0.31 (2.02)	0.81	2.02
Srilanka	-2.19 (-1.28)	-0.006 (-2.52)	0.28 (2.00)	0.80	1.91
Zaire	0.665 (0.08)	-0.003 (-6.33)	0.34 (2.45)	0.72	1.71
		(Sample 2: Annual Data)			
Ecuador	0.430 (8.40)	-0.001 (-2.03)	0.458 (3.33)	0.60	2.00
Jamaica	-0.001 (-0.08)	0.054 (1.55)	1.25 (5.34)	0.80	1.90
Sudan	0.100 (2.02)	-0.136 (-2.55)	0.785 (3.53)	0.59	1.72
Turkey	0.160 (3.40)	-1.31 (-2.80)	0.56 (2.01)	0.36	1.87
Peru	0.138 (1.83)	-0.630 (-0.93)	0.150 (0.29)	0.25	1.47

Numbers in parentheses below coefficients are t statistics

Devaluation and the Announcement Effect on Wages

As in the case of domestic prices, the announcement of devaluation may also create an inflationary psychology in the economy which causes wage earners to press for and to secure higher wage increases than otherwise would have been the case (even when the devaluation effect on wages through their effect on import prices is taken into account). To test for this the same procedure used earlier for the announcement effect on domestic prices is adopted. That is the wage equation is estimated for each country with two shift dummy variables. The first is the announcement dummy (=ANi) which takes a value of unity during the year of devaluation and zero elsewhere, and the second is a shift dummy (=Di) which takes a value of unity for all the years after devaluation and zero before.

For the announcement effect to be operative the announcement dummy should be positive and statistically significant. The results of this test are shown in Table III.4. The announcement dummy is positive in 6 cases; these are Ghana, The Philippines, Guyana, Jamaica, Sudan and Peru. But it is only significant at the 95% level in the case of Ghana, The Philippines, and Jamaica. The coefficient on the announcement dummy in these 6 cases is very small suggesting a slight upward shift in the wage equation during the first year following devaluation. For example in the case of Ghana, the coefficient AN67 suggests that wage increases were 0.22% points higher in the year after devaluation than they would otherwise be (even after accounting for the shift in the wage equation during the 1968-71 period). In all other cases, the announcement coefficient is negative.

Table III.4: The Announcement Effect of Devaluation on Wages

Country	γ_0	γ_1	γ_2	(Ani)	(Di)	R^2	D.W.
				Sample 1			
Mexico	0.114 (0.953)	-0.051 (-3.38)	0.004 (5.45)	-0.026AN76 (-0.44)	0.090D7779 (1.24)	0.52	1.73
Ghana	0.853 (0.00)	0.009 (1.58)	0.290 (1.70)	0.226AN67 (1.93)	-0.853D6871 (-0.00)	0.77	1.83
Philippines	-0.960 (-6.96)	0.002 (5.29)	0.180 (7.78)	0.0192AN70 (3.13)	-0.047D7174 (-3.80)	0.76	2.00
Pakistan	-0.126 (-0.61)	0.001 (0.08)	0.009 (2.13)	-0.039AN72 (-1.29)	0.041D7375 (0.85)	0.85	1.68
Guyana	-0.009 (-0.26)	-0.153 (-1.17)	0.153 (1.17)	0.011AN70 (0.50)	-0.006D7174 (-1.82)	0.34	2.02
Srilanka	-0.304 (-0.41)	-0.012 (-1.49)	0.130 (1.23)	-0.049AN67 (-0.83)	0.151D6871 (1.51)	0.34	2.01
Zaire	0.304 (2.69)	-0.017 (-3.88)	0.182 (1.02)	-0.089AN78 (-1.93)	0.019D7880 (4.74)	0.91	1.68

Table III.4: (COnt'd.)

Country	γ_0	γ_1	γ_2	(Ani)	(Di)	R^2	DW
			Sample 2				
Ecuador	0.102 (3.11)	-0.011 (-0.19)	0.228 (0.75)	-0.007 (0.34)	-0.032 (0.78)	0.19	2.33
Jamaica	0.017 (0.53)	0.092 (o.53)	0.909 (2.67)	0.016AN78 (2.22)	-0.003D7980 (-0.04)	0.60	1.76
Sudan	0.131 (2.32)	-0.111 (-0.42)	0.808 (3.56)	0.066AN78 (0.62)	-0.066D7980 (-1.55)	0.63	2.06
Turkey	-1.17 (-4.55)	0.076 (9.23)	2.15 (3.48)	-0.817AN74 (-3.32)	1.15D7578 (5.84)	0.98	1.98
Peru	0.160 (2.73)	-0.889 (-0.17)	-0.208 (-1.61)	0.084AN67 (1.12)	-0.008D5875 (-0.14)	0.40	1.84

The above results give little support to the announcement effect hypothesis. Statistically, the hypothesis is supported only in 3 cases, namely Ghana, Jamaica,and The Philippines. Here it must be noted that the IMF devaluation-supporting policies often include measures to restrain the growth of money wages. Under these conditions the announcement dummy might have captured the effect of such wage-restraining measures. If this is true, and if the announcement effect was present, a negative (Ani) coefficient would suggest that the effect of the wage-restraining measures outweighed the announcement effect while a positive (Ani) would suggest the opposite case.

Before proceeding to compute the effect of devaluation on domestic prices and wages using the estimated coefficients of the wage-price model, it is worthwhile summarizing the results of the price and wage equations:

(a) the change in import prices is found to be the most important factor influencing domestic price change. This result is consistent with the view that by increasing import prices in domestic currency, devaluation propogates domestic inflation;

(b) in most cases the coefficient on $\overset{*}{P}_m$ in the price equation is found to be substantially larger than the coefficient on $\overset{*}{W}$ implying a larger share of imports than wage costs in the final price of output;

(c) the wage response to domestic price changes appears to be very small; and

(d) there is no consistent evidence to support the announcement effect hypothesis on wages and prices. In the case of prices the hypothesis is supported in Jamaica, while in the case of wages it is supported in Ghana, The Phillipines, and Jamaica. However, the test for the announcement effect might have been influenced at the same time by the effect of the devaluation supporting measures.

Devaluation, Domestic Prices and Real Wages: Some Estimates

The fundamental purpose of currency devaluation, as viewed by the IMF, is to bring internal prices and costs in line with external prices. That is, since it is difficult to reduce the absolute level of internal prices, prices of international goods must be raised by raising the price of foreign exchange. If however devaluation results in feeding inflation, causing domestic prices to rise by the same proportion, the relative price effect would be eliminated. As it was shown earlier, the relationship between devaluation and domestic prices depends on: the degree of pass-through on the side of imports (K_m); the short-run effect of import price changes on domestic prices (b_3); the effect of domestic price changes on money wages (γ_2); and the effect of money wage changes on domestic prices (b_1).

Given the estimates of these basic parameters, the effect of devaluation on domestic prices and real wages can be computed for the sample of developing countries, under investigation. Taking Srilanka as an example, consider first the computation of the short-run effect of devaluation. This is given by equation (3.13):

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = K_m b_3$$

where K_m is the degree of pass-through on the side of imports, and b_3 is the coefficient on $\overset{*}{P}_m$ in the price equation. The estimate of b_3 in the case of Srilanka is 0.575 (see Table III.1). This, on the assumption that $K_m=1$, implies that domestic prices in the short-run would increase by 0.58% as a result of a 1% devaluation. This in turn suggests that the 24% devaluation which Srilanka undertook in 1967 would have caused domestic prices to rise by 13.8% in the short-run. The rise in domestic prices in the long-run is given by equation (3.14):

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = \frac{K_m b_3}{(1-\gamma_2 b_1)}$$

where γ_2 is the coefficient on $\overset{*}{P}_D$ in the wage equation, and b_1 is the coefficient on $\overset{*}{W}$ in the price equation. The estimates of γ_2 and b_1 in the case of Srilanka are 0.28 and 0.269 respectively. The long-run effect on prices is thus:

$$\frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = \frac{0.575}{(1-(0.28)(0.269)} = 0.62$$

Accordingly domestic prices in the long-run would increase by 0.62% as a result of a 1% devaluation. This suggests that the 24% devaluation in 1967 would have caused prices to increase by about 15% in the long-run. Given the estimated lag on $\overset{*}{P}_m$ and the values of γ_2 and b_1,

the results suggests that this effect will mature in about 12 to 16 months.

On the assumption that the effect of devaluation on domestic prices would be the same as that on export prices, the result above implies that 62% of the devaluation would be passed-through into higher export prices in domestic currency, which in turn implies that only 38% of the relative price advantage which devaluation is designed to achieve would be retained. This result can directly be obtained from equation (3.15):

$$\frac{\frac{\partial \overset{*}{P}_m}{\partial \overset{*}{R}} - \frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}}}{\frac{\partial \overset{*}{P}_m}{\partial \overset{*}{R}}} = \left[1 - \frac{b_3}{(1-\gamma_2 b_1)}\right]$$

$$= [1 - 0.62]$$

$$= 0.38.$$

The effect of devaluation on money wages can be obtained from equation (3.18):

$$\frac{\partial \overset{*}{W}}{\partial \overset{*}{R}} = \frac{\gamma_2 b_3}{(1-\gamma_2 b_1)} = \frac{(0.28)(0.575)}{(1-(0.28)(02.69))} = 0.17$$

so that money wage rates would increase by 0.17% as a result of 1% devaluation. This increase in money wages, minus the devaluation-induced increase in domestic prices, gives the effect of devaluation on real wages.

This is given by equation (3.19):

$$\frac{\partial \overset{*}{W}}{\partial \overset{*}{R}} - \frac{\partial \overset{*}{P}_D}{\partial \overset{*}{R}} = \left[\frac{K_m b_3}{(1-\gamma_2 b_1)}\right](\gamma_2 - 1) = (0.62)(0.28-1) = -0.45$$

Accordingly, real wages would fall by 0.45% as a result of 1% devaluation. This implies that the 24% devaluation in Srilanka would have caused real wages to fall by about 11%.

The effect of devaluation on domestic prices and real wages for the other countries are calculated in the manner described above and the results are shown in Table III.5. Column 1 of this table shows the year of devaluation for each country, while column 2 shows the % devaluation for each country (measured as the proportional change in the dollar price of the home currency) in that year. To facilitate a comparison among the different countries, column 6 shows the long-run effect of devaluation on domestic prices resultant from a 1% devaluation.

Inspecting column6 it is evident that a large proportion of the exchange rate devaluation is transformed into a rise in domestic prices in the devaluing countries. In all countries (with the exception of Ghana and The Philippines) more than 60% of the devaluation is reflected as a rise in domestic prices. The largest impact of currency devaluation on domestic prices among the countries under investigation is recorded by Jamaica where a 1% devaluation has led to a 1.24% increase in domestic prices. This is followed by Peru and Sudan with respective figures of 0.98 and 0.86%. The smallest effect is recorded

Table III.5: Devaluation, Domestic Prices, and Real Wages

	1	2	3	4	5	6	7	8	9
Country	Devaluation Year	Percentage Devaluation	Short-Run Effect on Prices	Long-Run Effect on Prices	Retained Price Advantage	Ratio of Domestic Price Change to % Devaluation	Induced Change in Real Wages	Implied Increase in Money Wages	The Ratio of Real Wage Change to % Devaluation
Mexico	1976	0.146	0.090	0.092	0.370	0.630	-0.09	0.002	-0.62
Ghana	1967	0.429	0.240	0.250	0.420	0.580	-0.160	0.090	-0.373
Philippines	1970	0.640	0.317	0.359	0.439	0.560	-0.255	0.104	-0.398
Pakistan	1972	1.30	0.802	0.810	0.380	0.620	-0.800	0.010	-0.615
Guyana	1970	0.150	0.087	0.090	0.400	0.600	-0.086	0.014	-0.573
Srilanka	1967	0.240	0.138	0.146	0.392	0.608	-0.120	0.026	-0.500
Zaire	1976	0.420	0.288	0.344	0.180	0.82	-0.227	0.117	-0.462
Sudan	1978	0.200	0.096	0.171	0.145	0.855	-0.036	0.135	-0.18
Peru	1967	0.443	0.403	0.434	0.020	0.978	-0.368	0.075	-0.83
Jamaica	1978	0.464	0.227	0.578	-0.24	1.24	0.145	0.723	0.32
Ecuador	1970	0.400	0.187	0.273	0.319	0.681	-0.148	0.125	-0.370
Turkey	1978	0.300	0.168	0.217	0.233	0.767	-0.103	0.127	-0.343

by The Philippines where a 1% devaluation has led to a 0.56% increase in domestic prices. Column 5 shows the other side of the picture, where in all countries not more than 40% of the initial competitive price advantage achieved by devaluation is retained. In the case of Jamaica the price advantage has apparently turned into a price disadvantage, while in the case of Peru and the Sudan only 2 and 14% of the price advantage has been retained, respectively.

A comparison between the short-run effect (column 3) and the long-run effect (column 4) of devaluation on domestic prices, provides some information regarding the wage-price response to devaluation. The greater the difference between the two effects, the larger is the wage price response and the smaller is the devaluation-induced fall in real wages. The effect of devaluation on real wages is summed up in column 9. For example, in the case of Peru a 1% devaluation has been associated with a 0.83% fall in real wages, while in the case of The Philippines, Zaire and Guyana it has been associated with a 0.39, 0.46 and 0.57 deterioration in real wages respectively.

Conclusion

First, the rise in import prices in domestic currency brought about by devaluation accounts for a large proportion of the devaluation-induced increase in domestic prices. Second, real wages apparently fall quite dramatically. Third, only a small proportion of the price advantage devaluation is designed to achieve is retained. Finally, as

domestic prices do not rise by the full amount of devaluation, the results imply that (assuming domestic prices and export prices are affected equally by the change in the exchange rate) devaluation causes a deterioration in the terms of trade. According to the assumptions of the wage-price model, this deterioration in the terms of trade would be equal to the retained price advantage. Thus the countries which experienced a large retained price advantage are the ones that would experience large deteriorations in their terms of trade as a result of devaluation. It remains to be seen how such price changes have affected the balance of payments of the devaluing countries. This will be the subject of the following chapter.

APPENDIX A

The definitions and sources of the data used to estimate the price and wage equations (3.1) and (3.2) are as follows:

(a) domestic prices in all countries are represented by the retail price index series given in line 64 in the IMF International Financial Statistics;

(b) import prices for all countries are represented by the import price index. In the case of Mexico and Jamaica import unit values were used;

(c) wage statistics were money wages expressed as average earnings or as wage rates (including manufacturing and wages in agricultural activities). The series, in all cases, cover wage earnings of both sexes irrespective of age;

(d) the unemployment series relate to wholly unemployed i.e. persons out of work and seeking employment on a particular day or during a relatively short period. In the case of Ghana, Pakistan, Guyana, Mexico, Ecuador and The Philippines, unemployment data represent data on registered unemployment. While in Turkey, The Sudan and Peru it represents registered applicants for work.

In the case of Srilanka it is collected from the compulsory unemployment insurance. In Zaire and Jamaica it is obtained from the labour force sample surveys; and

(e) The rate of productivity growth is computed from output per employee in both agricultural and manufacturing sectors.

Data Sources are as follows:

I.M.F. International Financial Statistics

U.N. Monthly Bulletin of Statistics

U.N. Year Book of National Accounts Statistics

U.N. Foreign Trade Statistics for Asia and the Far East

U.N. Economic Commission for Africa

U.N. Statistical Year Book

Bulletin of Labour Statistics

Monthly Bulletin of Labour Statistics

Data cited in the "Recent Economic Development Reports", prepared by IMF Staff. Various country issues and Statistical Appendices.

Annual Reports of National Central Banks. Various issues

Data supplied by National Authorities.

CHAPTER FOUR

EMPIRICAL TESTS OF THE EFFECTS OF DEVALUATION ON THE BALANCE OF PAYMENTS

Introduction

In the previous chapter it was shown that a large proportion of the exchange rate depreciation would be transformed into higher domestic prices. This implied that only a small proportion of the relative price advantage of devaluation would be retained. This retained price advantage is a measure of the devaluation-induced deterioration in the terms of trade. In the context of the elasticity approach the deterioration in the terms of trade will worsen the balance of payments unless the induced increase in export volume and the induced reduction in import volume are sufficient enough to outweight the adverse terms of trade effect. As we have already seen however, a change in the terms of trade is not the only route through which devaluation can affect the balance of payments. It can also affect the balance of payments through direct effects on income and absorption as prices rise. The purpose of this chapter is to develop and test an empirical model which incorporates some major routes through which devaluation affects the payments balance. Employing the estimated parameters of this model, the chapter examines the effectiveness of devaluation in our sample of developing countries. The chapter ends by comparing the results obtained from this model with a simple before and after test.

A Demand Side Model for the Balance of Payments

The model divides the world economy into two countries - the devaluing country (the home country) and the rest of the World (the foreign country). All the goods produced by the two countries are assumed to be tradeable. The home country demand for foreign goods is assumed to depend on foreign prices, domestic prices, and domestic expenditure. Domestic expenditure depends on two main factors, real domestic income and real money balances. An increase in real money balances is expected to increase real wealth. This in turn is expected to increase domestic demand and thereby the demand for foreign goods To highlight the importance of real money balances in influencing expenditure. it is included as a separate argument in the demand function for foreign goods.

The foreign demand for domestic goods depends on foreign prices, domestic prices, and foreign income. In a completely specified model, foreign demand for domestic goods should also depend on foreign real money balances. This is ignored here owing to data difficulties.

The quantity of foreign goods demanded by the home country can be specified as a multiplicative function of the ratio of foreign to domestic prices, real income and real money balances. That is:

$$m = (P_f/P_D^r)^{\psi} \quad Y^{\pi} \quad R_m^{\theta} \qquad (4.1)$$

where m is the quantity of foreign goods demanded by the home country, P_f is foreign prices, r is the exchange rate defined as the foreign price of domestic currency, P_D is domestic prices, ψ is the price

elasticity of demand for foreign goods, Y is domestic real income, π is the income elasticity of demand for imports, R_m is domestic real money balances, and θ is the elasticity of demand for foreign goods with respect to real money balances.

Also the quantity of home goods demanded by the foreign country can be specified as a multiplicative function of the ratio of domestic prices to foreign prices and foreign real income:

$$x = (P_D{}^r/P_f)^{\Omega} \quad Z^{\varepsilon} \tag{4.2}$$

where x is the volume of exports; r is the foreign price of domestic currency; Ω is the foreign price elasticity of demand for home goods, Z is foreign real income, ε is the foreign income elasticity of demand for home goods, and all other variables are defined as before.

Normally the balance of payments is defined as the absolute difference between the value of exports and imports. In this model the balance of payments is defined as the ratio of the money value of exports to the money value of imports†.

$$B = \frac{P_D rx}{P_f m} \tag{4.3}$$

The balance of payments just defined is homogeneous of degree zero in money prices. That is, an equiproportional change in money prices

† This specification is chosen because it facilitates the empirical investigation; for one cannot take logarithms of negative balance of payments values.

of exports and imports will leave B unchanged. When the balance of payments is defined as the difference between the money value of exports and imports an equiproportional change in prices will leave the balance unchanged only if trade is initially balanced. In this sense our definition of the balance of payments eliminates movements in the balance of payments arising from initial trade imbalances.

Using equations (4.1), (4.2) and (4.3), the balance of payments can be expressed as:

$$B = \frac{P_D rx}{P_f m} = \frac{\left[P_D r \quad (P_D r / P_f)^{\Omega} \quad Z^{\varepsilon} \right]}{\left[P_f \quad (P_f / P_D^r)^{\psi} \quad Y^{\pi} \quad R_m^{\theta} \right]} \qquad (4.4)$$

Taking logarithims and rearranging yields:

$$\log B = (\Omega+\psi-1) \log (P_f/P_D^r) + \varepsilon \log Z - \pi \log Y - \theta \log R_m \qquad (4.5)$$

Equation (4.5) expresses several familiar propositions in economic theory:

(a) the balance of payments is positively related to foreign real income;

(b) the balance of payments and domestic real income are negatively related. Given the home country's income elasticity of demand for foreign goods an increase in domestic real income is expected to worsen the balance of payments;

(c) increases in real money balances are associated with deteriorations in the balance of payments; and

(d) since all prices in the equation are adjusted by the exchange rate, changes in the relative prices of tradeable goods and exchange rate change are analytically equivalent. Thus the coefficient $(\Omega+\psi-1)$ in equation (4.5) is an expression of the well-known Marshall-Lerner condition, which states that, the sum of ψ and Ω must be greater than unity in absolute value if devaluation is to be successful in raising B. In the context of this model devaluation will be successful if $(\Omega+\psi-1)>0$.

Equation (4.5) in its estimation form can be written as:

$$\text{Log } B = a_0 + a_1 \log (P_f/P_D^r) + a_2 \log Y + a_3 \log Z + a_4 \log R_m \quad (4.6)$$

where

a_0 is a constant term

a_1 is the terms of trade coefficient $(\Omega+\psi-1)$

a_2 is the elasticity of the balance of payments to domestic real income

a_3 is the balance of payments elasticity to foreign real income

a_4 is the elasticity of the balance of payments to real money balances.

For the deterioration in the terms of trade to have a favourable effect on the balance of payments a_1 must be positive; i.e. $(\Omega+\psi)$ must be greater than unity. The coefficients a_2 and a_4 are expected to have a negative sign while the coefficient a_3 is expected to have a positive sign.

Variables Definitions and Measurements

The explanatory variables in equation (4.6), domestic income, foreign income, and domestic real money balances, are all measured in local currency. Foreign and domestic prices are represented by the import price index and the export price index of the devaluing country. Domestic real income is measured as gross domestic product at constant prices, while foreign income is measured as a weighted average of the real GDP of 28 trading partners, each weighted by its share in the total exports of the developing countries.

The definition of real money balances which is to be used should be consistent with the portfolio theories that are to be tested and which were discussed in Chapter Two. These theories do not offer a clear definition of what is money. Here, a definition which might facilitate the empirical investigation is attempted. The starting point is that these theories consider money as net wealth. Increasing the money supply, given the price level, will increase real wealth and hence the level of expenditure. Thus an increase in the money supply is expected to be associated with a deterioration in the balance of payments.

By reducing real cash balances (real wealth) devaluation is said to reduce expenditure relative to income and thus produce a balance of payments improvement. These theories stress the fact that this would be the case only if the rate of increase in the money supply is kept less than in proportion to the reduction in real cash balances resulting from the change in the exchange rate.

From this it seems that the definition of money supply which would be consistent with these theories should fall within a category of money which reflects government actions; i.e., government monetary policy. The government can influence the money supply through its power to regulate the domestic portion of high powered money and its ability to sterilize the impact of international reserve flows arising from payments imbalances[†]. The total high powered money is measured as:

$$H = F + D \tag{4.7}$$

where H is the total high powered money, and F and D are its foreign and domestic components, respectively. The domestic portion of high powered money is measured as the amount of money held by the public (N), plus bank reserves (S). That is:

$$D = N + S \tag{4.8}$$

In regulating the money supply the government is assumed to examine

---

[†] The government can also influence the money supply by its power to regulate deposit reserve requirements. An ideal money supply measure that reflects government actions should include the government's ability to regulate reserves requirements.

last year's figure of the supply of high powered money and then to decide the amount of increase (decrease) needed for the current year. This means that a money supply variable which reflects government actions could be measured as last year's supply of high powered money, plus the increase (decrease) which the government decides for this year†. From equation (4.7) this can be expressed as:

$$H_t = H_{t-1} + \Delta(F+D) \tag{4.9}$$

where H_t is the supply of high powered money in the current year, H_{t-1} is last year's high powered money, and $\Delta(F+D)$ is the change in high-powered money which reflects government decisions with regard to monetary policy. The total money supply will be some multiple of high powered money given by the money multiplier. That is:

$$Ms_t = k \; [H_{t-1} + \Delta(F+D)] \tag{4.10}$$

where Ms is the total money supply and k is the money multiplier. The supply of real money balances (R_m) is defined as Ms/P_D where P_D is an index of the domestic price level.

Devaluation and the Balance of Payments

In our demand-oriented model (equation (4.6)) devaluation can affect

† Underlying this is the assumption that the government not only has the power to regulate the money supply, but also exercises this power.

the balance of payments favourably through two main routes. The first is through a change in the terms of trade (P_f/P_D^r) and the second is through real money balances (R_m).

Devaluation is expected to change the relative price of exportables and importables thereby improving the countries price competitiveness. This is expected to improve the balance of payments provided that the Marshall-Lerner condition is satisfied. The coefficient a_1 in equation (4.6) provides a direct test for this condition. If the condition is satisfied a_1 will be positive. Devaluation, by increasing domestic prices by more than in proportion to any increase in money supply, can reduce the level of expenditure relative to income, and hence improve the balance of payments. Whether or not real money balances are negatively related to the balance of payments is tested by the coefficient a_4.

Devaluation can also affect the balance of payments through real income. In terms of equation (4.6) this effect can go either way depending on whether devaluation is expansionary or contractionary. If for example, devaluation reduces domestic real income, aggregate demand (including the demand for imports) would fall, which would in turn improve the balance of payments. The strength of this effect would depend on the extent of the devaluation-induced fall in real income and the magnitude of a_2. The question of whether devaluation would reduce real income and real money balances sufficiently enough to improve the balance of payments can be tested indirectly using a residual test which will be described in the following sections.

First equation (4.6) is estimated for the sample of the 12 countries of Chapter Three. The 12 countries considered involved 14 cases of devaluation. For each devaluation the equation is estimated forthe balance of trade (BT) and the balance on current account (BC), using data for a period of time prior to the year of devaluation. The equations are estimated by Ordinary Least Squares (OLSQ), using the Cochrane-Orcutt iterative technique in the presence of first order serial correlation. The results are discussed below.

Empirical Results

The estimated equations for the trade balance and the current account balance are shown in Tables IV.1 and Table IV.2, respectively. The tables show the estimated coefficients, their t ratios, the Durbin-Watson statistics, the coefficients of determination, and the type of equation. The estimated trade balance equations show that in all cases the terms of trade coefficient (a_1), is negative, and it is statistically significant at the 95% level in 8 cases. These are; Ghana, Srilanka, Peru, Guyana, The Sudan, Turkey (1978), Pakistan and Zaire. Recalling that a_1 is equal to $(\Omega+\psi-1)$, and that $(\Omega+\psi)>1$ is the Marshall-Lerner condition, this result indicates that none of the countries in the sample satisfies this condition. This, in turn, suggests that devaluation does not improve the trade balance through a deterioration in the terms of trade.

Table IV.1: The Trade Balance Equations

Country and Devaluation Year	Period	a_0	a_1	a_2	a_3	a_4	R^2	DW	Equation Type
Mexico (1976)	1956-75	-0.01 (-0.06)	-0.64 (-0.58)	-1.04 (-3.45)	0.93 (3.17)	-0.04 (-2.04)	0.83	2.25	CORC
Ghana (1967)	1950-66	-0.93 (-1.33)	-0.66 (-6.95)	-1.84 (-2.54)	0.51 (2.51)	-0.25 (-3.60)	0.88	2.38	CORC
Philippines (1962)	1942-60	1.17 (0.95	-0.24 (-0.97)	0.57 (2.24)	-0.38 (-1.31)	-0.49 (-1.62)	0.81	2.09	OLSQ
Philippines (1970)	1950-69	-2.56 (-1.42)	-0.45 (-1.06)	1.46 (1.69)	-0.80 (-1.22)	-0.94 (-2.68)	0.72	1.88	CORC
Pakistan (1972)	1950-70	-0.89 (-1.47)	-0.36 (-2.93)	-0.88 (-3.47)	0.32 (1.33)	0.45 (11.18)	0.93	1.94	OLSQ
Guyana (1970)	1950-70	2.13 (0.94)	-0.93 (-3.66)	-0.51 (-0.48)	0.26 (0.85)	-0.21 (-0.45)	0.68	2.10	OLSQ
Srilanka (1967)	1954-66	0.72 (2.81)	-0.59 (-2.74)	-3.0 (-4.43)	1.42 (3.25)	-0.42 (-0.62)	0.94	2.04	OLSQ
Zaire (1976)	1963-77	-1.24 (-1.61)	-0.73 (-2.25)	-1.19 (-2.72)	0.81 (4.14)	1.47 (4.28)	0.83	2.73	CORC

Table IV.1: (Cont'd.)

Country and Devaluation Year	Period	a_0	a_1	a_2	a_3	a_4	R^2	DW	Equation Type
Sudan (1978)	1955-77	-0.01 (-0.21)	-0.92 (-2.23)	-0.58 (-1.50)	0.10 (2.04)	-1.95 (-4.41)	0.76	1.64	CORC
Peru (1967)	1950-65	0.005 (0.02)	-1.18 (-3.65)	-0.65 (-4.23)	0.82 (4.18)	-0.09 (-1.57)	0.76	1.99	OLSQ
Jamaica (1978)	1954-76	-0.11 (-0.13)	-0.71 (-0.32)	-0.92 (-3.18)	0.96 (4.76)	-0.33 (-2.37)	0.81	1.55	CORC
Ecuador (1970)	1950-70	-1.23 (-1.13)	-0.36 (-0.72)	-2.11 (-2.14)	2.18 (3.35)	-0.55 (-0.75)	0.86	2.09	OLSQ
Turkey (1970)	1965-77	-5.61 (-2.58)	-0.01 (-0.09)	-1.07 (-9.94)	0.94 (3.67)	-0.24 (-1.04)	0.84	2.06	OLSQ
Turkey (1978)	1955-77	-0.32 (-0.09)	-0.06 (-4.00)	-2.0 (-3.53)	0.79 (0.25)	-0.10 (-1.72)	0.93	1.94	CORC

The coefficient on domestic real income, (a_2), has the expected negative sign in 12 cases and is significant at the 95% level in all of these cases, except Guyana. It is, however, positive and insignificant in the case of The Philippines (1962 and 1970). The coefficient on foreign real income, (a_3), has the expected positive sign in 12 cases of which 9 cases are significant at the 95% level. In two cases, the Philippines (1962 and 1970) it is negative but insignificant.

The coefficient on real money balances, (a_4), is negative in 11 cases. However, it is negative and significant in only 5 cases. These are Jamaica, Sudan, The Philippines (1970), and Mexico. The trade balance and real money balances are positively related in the case of Zaire, Pakistan, and Turkey (1970) but the coefficient is significant only in the first two.

Turning now to the results of the current account balance Table IV.2, it is evident that in 12 cases the Marshall-Lerner condition is not satisfied since the terms of trade coefficient is found to be negative. In the cases of Mexico and Jamaica the coefficient is positive, suggesting that the current account balance would improve as a result of deteriorations in the terms of trade. However in both cases the coefficient is not statistically significant.

The coefficient on real domestic income has the expected positive sign in 12 cases. They are all significant except in the case of Guyana. The coefficient on foreign real income is positive and significant in 12 cases. In the case of Turkey (1970 and 1978) it is negative and significant. Finally, the coefficient on real money balances is negative in 11 cases and significant in the case of Mexico, Ghana, The Philippines (1962 and 1970), and Peru.

Table IV.2: The Current Account Equations

Country	a_0	a_1	a_2	a_3	a_4	R^2	DW	Equation Type
Mexico	-0.09 (-0.18)	0.02 (0.51)	-0.97 (-3.62)	0.91 (3.72)	-0.77 (-2.68)	0.89	2.24	CORC
Ghana	0.30 (0.03)	-0.41 (-2.08)	-0.73 (-2.00)	0.41 (2.00)	-0.74 (-2.08)	0.86	1.89	CORC
Philippines (1962)	0.31 (0.21)	-0.01 (-0.32)	0.59 (2.64)	-0.31 (-4.11)	-0.41 (-1.73)	0.81	2.08	OLSQ
Philippines (1970)	-0.90 (-2.80)	-0.39 (-1.33)	1.31 (2.53)	-0.74 (-4.51)	-1.22 (-2.93)	0.94	2.26	CORC
Pakistan	-1.50 (-2.34)	-0.26 (-1.30)	-0.61 (-3.65)	0.32 (4.09)	0.16 (11.09)	0.71	1.88	CORC
Guyana	1.86 (0.77)	-0.82 (-3.43)	-0.45 (-0.43)	0.26 (2.67)	-0.11 (-0.22)	0.75	1.98	OLSQ
Srilanka	-1.29 (-0.19)	-0.97 (-2.69)	-1.33 (-2.41)	0.15 (3.39)	0.84 (0.73)	0.81	1.78	CORC
Zaire	2.85 (3.54)	-0.79 (-0.68)	-1.62) (-3.05)	0.57 (2.30)	0.33 (2.17)	0.89	1.69	CORC

Table IV.2: (Cont'd.)

Country	a_0	a_1	a_2	a_3	a_4	R^2	DW	Equation Type
Sudan	-2.31 (-3.10)	-0.10 (-0.80)	-1.43 (-4.75)	0.43 (2.64)	-1.48 (-0.11)	0.65	2.46	CORC
Peru	-0.002 (-0.08)	-0.91 (-2.56)	-0.45 (-2.38)	0.88 (2.49)	-0.10 (-2.49)	0.50	1.97	OLSQ
Jamaica	0.85 (1.41)	0.31 (0.69)	-0.29 (-2.38)	0.49 (2.38)	-0.04 (-0.44)	0.88	2.03	OLSQ
Ecuador	-0.43) (-1.33)	-0.63 (-0.72)	-0.41 (-2.14)	0.56 (3.35)	-0.11 -0.75)	0.88	2.03	OLSQ
Turkey (1970)	-3.20 (-1.33)	-0.80 (-2.26)	-1.14 (-4.75)	1.57 (2.64)	-0.03 (-0.11)	0.92	1.86	CORC
Turkey (1978)	-2.41 (-1.93)	-0.03 (-2.31)	-1.08 (-3.81)	0.64 (3.89)	-0.08 (-0.41)	0.84	2.09	OLSQ

In 9 countries under investigation the elasticity of the balance of trade to domestic real income (a_2 in Table IV.1) is found to be larger in absolute size than the elasticity of foreign real income (a_3). These countries are Mexico, Ghana, Pakistan, Srilanka, Zaire, Guyana, Sudan and Turkey (1970 and 1978). In 6 of these cases the elasticity of domestic real income is twice as large as that of foreign real income. The same observations are also true for the estimated current account equations. This result implies that any attempt from the side of these developing countries to sustain a rate of growth at even half the rate of growth of the rest of the world will put pressure on their balance of payments unless they adopt policies to raise a_3 and reduce a_2. This can be achieved by diverting resources to the production of goods which are more attractive to the home as well as to the foreign market.

The results are also consistent with the view that the balance of payments is negatively related to the volume of real money balances. Yet, compared with other variables and judged by the frequency of statistically significant coefficients, the real money balance variable is found to be the least important in explaining movements in the trade and the current account balances.

An Additional Econometric Test

The previous section provides strong evidence that the majority of the countries under investigation do not satisfy the Marshall-Lerner condition of a successful devaluation. This implies that their balance of payments do not improve with changes in the relative price of their

exports and imports. To provide further evidence of this issue the data are re-examined using the Seemingly Unrelated Regression Technique.

One of the assumptions of the Ordinary Least Squares Method, used to estimate the trade and the current account equations, is that the error terms of the individual countries are independent. In the case of external balances this assumption might not be satisfied. That is because for each export in the World there must be an equivalent import and for each balance of payments deficit there must be an equivalent surplus. Hence the errors of the balance of payments of all individual countries in the World are related. Although our sample of countries is very small relative to total world trade, the possibility that the errors of the estimated equations might be related cannot be completely dismissed.

An econometric technique which allows for this possibility is the Seemingly Unrelated Regression. This technique incorporates the covariance of errors among the different countries and estimates the coefficients of the individual countries using Aitken's Generalized Least Squares[+]. The first step in this technique is to estimate the equation of each country by ordinary least squares on the assumption that the errors are independent. Second the errors of these equations are used to create a variance-covariance matrix (V). In the third and final step, the individual country equations are re-estimated using the formula:

[+] See Zellner , A. (1962) "An Efficient Method of Estimating Seemingly Unrelated Regression, and Test for Aggregation Bias", Journal of American Statistical Association, June, pp.348-368. See also Kementa, Jan (1971) Elements of Econometrics (New York; Macmillan), and Miles (1978)*op. cit.*, p.104.

$$B = (X' V^{-1} X)^{-1} (X' V^{-1} Y) \qquad (4.11)$$

where Y is a vector of the dependent variables and X is a matrix of the independent variables. Note that if the errors are uncorrelated, V becomes a diagonal matrix and equation (4.11) reduces to

$$B = (X' X)^{-1} (X' Y) \qquad (4.12)$$

which is the Ordinary Least Squares estimator. Thus, by taking information about the correlation of the disturbances, into account, the Seemingly Unrelated Regression method increases the efficiency of the estimator. A problem which might arise when this technique is used is the possibility of first-order autocorrelation of the disturbances of the individual country. To allow for this, the autocorrelation coefficients (ρ) that are obtained from the Cochrane-Orcutt technique are used to transform the data before running the Seemingly Unrelated Regression. A second problem is that the seemingly unrelated regression requires countries to have observations for the same time period. The time period which is covered by the majority of the countries in the sample is 1955-1970. This meant the exclusion of 4 countries from this test, namely, Ghana, Srilanka, Zaire and Peru.

The results of the Seemingly Unrelated Regression for the trade balance are shown in Table IV.3. Table IV.4 examines the increased efficiency of the estimators by comparing the signs and the significance of the estimated coefficients before and after the use of the seemingly

Table IV.3: The Trade Balance: Seemingly Unrelated Regressions

Country	γ_0	γ_1	γ_2	γ_3	γ_4
Mexico	-0.02	-0.30	-1.72	0.63	-0.10
	(-0.11)	(-2.38)	(-4.18)	(2.61)	(-3.40)
Philippines	2.11	-0.34	-0.71	0.42	-0.54
	(3.21)	(-4.80)	(-1.41)	(2.42)	(-1.60)
Pakistan	-0.24	-0.48	-0.91	0.26	0.53
	(-1.64)	(-2.76)	(-3.00)	(2.13)	(10.24)
Guyana	2.00	-0.77	-0.68	0.12	-0.41
	(0.44)	(-3.04)	(-2.73)	(4.11)	(-0.62)
Sudan	0.004	-0.84	-0.63	0.25	-2.00
	(2.41)	(-3.14)	(-2.17)	(2.09)	(-3.38)
Jamaica	-0.09	-0.49	-0.88	0.94	-0.65
	(-1.31)	(-2.66)	(-4.17)	(3.22)	(-2.71)
Ecuador	-0.94	-0.42	-1.96	1.75	-0.29
	(-1.10)	(-1.21)	(-2.20)	(3.33)	(-2.18)
Turkey	-2.44	-0.15	-1.81	0.94	-0.37
	(-1.00)	(-0.95)	(-10.32)	(4.22)	(-0.63)

Degrees of Freedom = 10

Significance Levels:

97.5% = 2.228 (one tail)

95.0% = 1.812 (one tail)

90.0% = 1.372 (one tail)

Unrelated Regression Technique[†]. From Table IV.4 it is clear that the frequency of positive and negative signs for the terms of trade coefficient, and the real money balance coefficient have not been affected by the use of the Seemingly Unrelated Regression. The signs of the coefficient on real domestic income, and foreign real income have been affected. Before there were 7 countries which had the expected negative sign on the coefficient on domestic income, now there are eight. Earlier there were 6 countries that had the expected positive sign on the coefficient on foreign income, now there are eight.

There are also slight changes in the number of significant coefficients. In the Ordinary Least Squares Regressions the terms of trade coefficients were negative and significant in 5 cases. This number increases to 6. Also the coefficients on real domestic income which were negative and significant increase from 6 to 7. The positive and significant coefficients on real foreign income increase from 5 to 8. There is no change in the number of negative and significant coefficients on real money balances.

[†] It must be noted that the change in the number of observation of the individual countries as a result of limiting the estimation time period to 1955-70, has not affected the signs and significance (at the 95% level) of the OLSQ estimates of the country equations. The exceptions here are The Philippines, and Turkey where there are slight changes in signs and the number of significant coefficients. The estimated OLSQ equations for The Philippines and Turkey are:

$$\text{Philippines: } \log BT = \underset{(-1.46)(-1.58)}{-0.32 - 0.21 \log (P_f/P_D^r)} + \underset{(3.42)}{0.69 \log Y} - \underset{(-1.67)}{0.42 \log Z} - \underset{(-2.73)}{0.56 \log R_m}$$

$$\text{Turkey: } \log BT = \underset{(-2.46)(-2.11)}{-1.48 - 0.18 \log (P_f/P_D^r)} - \underset{(-3.62)}{1.3 \log Y} + \underset{(2.22)}{0.82 \log Z} - \underset{(-1.08)}{0.07 \log R_m}$$

Table IV.4: Trade Balance: Signs and Significance of Coefficients Before and After the Use of Seemingly Unrelated Regression

Variables	(P_f/P_D^r)		Y		Z		R_m	
Signs	A	B	A	B	A	B	A	B
+	0	0	1	0	6	8	1	1
-	8	8	7	8	2	0	7	7
			Significant at the 95% Level					
+	0	0	1	0	5	8	1	1
-	5	6	6	7	0	0	4	4

A: Before B: After

The Seemingly Unrelated Technqiue is also applied to the current account balance. The results are shown in Table IV.5 and Table IV.6. Here there are also slight changes in the frequency of positive and negative coefficients. For example, the number of negative terms of trade coefficients increased from 6 to 7, while the coefficients on domestic real income,with the expected negative sign,increased from 6 to 8. However, there is no change in the sign frequency of the coefficient on

Table IV.5: The Current Account: Seemingly Unrelated Regression

Country	γ_0	γ_1	γ_2	γ_3	γ_4
Mexico	-1.41	0.10	-1.03	0.83	-0.55
	(-0.76)	(2.11)	(-4.64)	(3.29)	(-1.48)
Philippines	-0.60	-0.08	-0.94	0.66	-0.15
	(-0.004)	(-1.09)	(-4.6)	(2.36)	(-0.73)
Pakistan	-1.90	-0.74	-0.99	0.19	0.10
	(-2.00)	(-2.58)	(-6.60)	(4.02)	(7.01)
Guyana	3.37	-0.86	-0.46	0.32	-0.03
	(0.18)	(-2.60)	(-2.88)	(2.66)	(-2.44)
Sudan	-0.01	-0.36	-0.98	0.13	-0.71
	(-2.03)	(-2.48)	(-5.16)	(3.31)	(-1.04)
Jamaica	0.51	-0.02	-0.37	0.69	-0.21
	(0.48)	(-1.28)	(-3.83)	(2.61)	(-0.17)
Ecuador	-0.66	-0.82	-1.13	0.98	-0.64
	(-2.43)	(-2.41)	(-3.24)	(8.18)	(-0.00)
Turkey	1.14	-0.86	-2.02	1.33	-0.26
	(0.55)	(-3.22)	(-2.62)	(2.58)	(-0.10)

Degrees of Freedom = 10

Significance Levels:

97.5% = 2.228 (one tail)

95.0% = 1.812 (one tail)

90.0% = 1.372 (one tail)

real money balances[†]. The number of significant coefficients is also affected. There is now one positive terms of trade coefficient which is significant at the 95% level, and 5 negative significant coefficients. The number of significant coefficients with the expected signs increased in the case of all other variables, except real money balances where it is reduced from 2 to 1. (See Table IV.6 overleaf.)

The Seemingly Unrelated Regression Technique used in this section, by providing additional verification of the trade model estimated, gives additional support to our earlier conclusion that, in the majority of countries, the Marshall-Lerner condition does not seem to be satisfied. Only in the case of Mexico does the Seemingly Unrelated Regression suggest otherwise.

[†] The frequency of positive and negative coefficients is different from that of Table IV.2. This is because limiting the time period to 1955-1970 resulted in a change of sign for Ecuador's coefficient on domestic income. For The Philippines and Turkey there is no change in the signs of the coefficients, but there is some change in the number of statistically significant coefficients. The OSLQ equations estimated for these countries over the period 1955-1970 are:

Philippines: $\log BC = -1.30 - 0.01 \log (P_f/P_D^r) + 1.00 \log Y + 0.68 \log Z - 0.42 \log R_m$

$(-1.01)(-0.37) \quad (2.18) \quad (2.71) \quad (-3.38)$

Turkey: $\log BC = 0.96 - 0.66 \log (P_f/P_D^r) - 1.57 \log Y + 0.71 \log Z - 0.06 \log R_m$

$(0.11)(-2.14) \quad (-3.86) \quad (3.61) \quad (-0.92)$

Table IV.6: Signs and Significance of Coefficients Before and After the Seemingly Unrelated Regression

Variables	(P_f/P_D^r)		Y		Z		R_m	
Signs	A	B	A	B	A	B	A	B
+	2	1	2	0	7	8	1	1
-	6	7	7	8	1	0	7	7
			Significant at the 95% Level					
+	0	1	1	0	7	8	1	1
-	4	5	5	8	1	0	2	1

A: Before B: After

The Effectiveness of Devaluation: The Residual Test

The effectiveness of devaluation can also be tested by examining the behaviour of the equation residuals following devaluation. The estimated coefficients on the terms of trade; domestic real income, foreign real income, and real money balances provide a method to standardize for the effects of these variables on the trade balance. Applying these coefficients to the values of the variables (assuming no devaluation) the "predicted" values of the trade balance can be obtained. In making this computation it is assumed that, in the absence of devaluation, import prices, export prices, domestic income, foreign income and real money balances would have continued at their trend rate. Subtracting the predicted balance of trade values from the actual balance of trade

values, the equation residuals can be obtained. An examination of these residuals around the years of devaluation gives some idea of the effectiveness of devaluation. This method implicitly assumes that the coefficients of the equations would not be changed by the devaluation and that changes in the actual trade balance are solely due to the effect of devaluation and its supportive policies.

For each country in the sample the residual values are computed for 6 years. These involve 3 years before and 3 years after devaluation. The computation is for 3 years after devaluation on the assumption that within this period any expected benefit of devaluation should have occurred. Also since (under certain circumstances) a slowing-down in the deterioration in the trade balance might be considered as a "success" the 3 years before are included for comparison purposes.

In presenting the results of this test the third year after devaluation is called t+3 while the third year before devaluation is called t-3. The residuals of similar time periods (with respect to devaluation) are examined across countries by calculating average residuals. For example, the average residual in the year (t+1), is obtained by summing up the residuals of the individual countries in that year and dividing by the number of countries in the sample[†]. The average residuals for the other 5 years are obtained in this manner. A similar procedure is also used to calculate the average residuals of the balance on current account.

[†] All computations are based on the equations in Table IV.1 and Table.IV.2.

First the average residual values for the balance of trade are examined. These are shown in Table IV.7. The average residuals in the 3 years before devaluation are negative-indicating initial trade deficit. In the first year before devaluation the residuals averaged -0.011. In the first year after the average residuals fell to -0.018 implying a deterioration in the trade balance. In the second and third years after the average residuals are negative and extremely large. In these two years the average residuals are 90% and 152% larger in absolute size than any other residual.

Table IV.7: The Trade Balance: Total and Average Residuals

Period	t-3	t-2	t-1	t+1	t+2	t+3
Total	-0.1930	-0.1486	-0.1528	-0.2513	-0.3616	-0.4841
Average	-0.0137	-0.0106	-0.0109	-0.0181	-0.0268	-0.0346

Turning now to the results of the current account balance (Table IV.8), the average residual recorded a small positive value in the year t+1 indicating a slight improvement in the current account. In the years t+2 and t+3 the residuals recorded extremely large negative values. The positive residual in the year t+1 is only $1/10^{th}$ of the negative residual in the year t+2 and $1/9^{th}$ of the negative residual in the year t+3.

Table IV.8: The Current Account: Total and Average Residuals

Period	t-3	t-2	t-1	t+1	t+2	t+3
Total	-0.2311	-0.1936	-0.2518	+0.0381	-0.3444	-0.3951
Average	-0.0166	-0.0138	-0.0179	+0.0027	-0.0246	-0.0282

According to these results, there is no evidence to support the claim that devaluation improves the balance of payments. On the contrary, devaluation can be said to cause large deteriorations in the payments balance. But the residual values on which this conclusion is based, may be influenced by the bad experience of 1 or 2 countries in the sample. We therefore examine the individual countries.

The residual values of the individual countries over the 6 years are examined in 2 different ways. First the residual value for each country in the year t+1 is compared with the residual value in the year t-1. Such a comparison gives some information about the impact effect of devaluation (as opposed to the long-run effect)†. Second for each country the residual values averaged over the 3 years before devaluation are compared with the average residual value in the 3 years after devaluation. This comparison gives an idea about the long-run effect of devaluation. These comparisons are conducted for the residual values of the trade balance and the balance on current account.

† For an empirical examination of the impact effect of currency devaluation, see Cooper, R. (1971) "An Assessment of Currency Devaluation in Developing Countries", in Ranis, G. (ed.) Government and Economic Development, Chapter 13, Yale University Press.

The results of the trade balance, (Table IV.9) shows that in 4 cases, namely Mexico, Ghana, and The Philippines (1962 and 1970) devaluation had a favourable effect. In all the other cases devaluation had an adverse impact effect.

The comparison between the average residual values in the 3 years after and the average residual values in the 3 years before shows that, in all cases, the trade balance deteriorated. The exception is Ghana, where the comparison reveals an improvement in the trade balance.

The results of the current account balance (Table IV.9), show that the impact effect is favourable in 3 cases: Mexico, Ghana and The Philippines (1962). Notice that (with the exception of The Philippines, 1970) these are the same countries which experienced a favourable impact effect on the trade balance. The favourable impact effect on the current account is sustained only in the case of Ghana and The Philippines (1962). In all other cases, the impact effect on the current account is adverse and the average residuals in the years after are negative and larger than those in the years before indicating a deterioration in their current account balance.

The Effectiveness of Devaluation: The Before-And-After Test

In the previous section the effectiveness of devaluation was tested by the residual method, which utilized the estimated coefficients of the balance of trade and the current account equations. The drawback of this test is that some of the coefficients used in the prediction

Table IV.9: Examining the Residual Values of Individual Countries (percentage change)

Country	Trade Balance		Current Account	
	Impact Effect[a]	Long-Run Effect[b]	Impact Effect[a]	Long-Run Effect[b]
Mexico	7.8	-10.6	64.2	-8.1
Ghana	32.0	14.0	46.1	14.4
Philippines (1962)	3.8	-12.8	38.8	5.7
Philippines (1970)	2.4	-18.3	5.8	-17.1
Pakistan	-21.0	-16.9	-6.2	-20.2
Guyana	-16.0	-8.4	-11.3	-32.6
Srilanka	-10.8	-30.6	-18.9	-21.0
Zaire	-12.5	-19.1	-47.6	-29.6
Sudan	-31.0	-41.3	-23.4	-15.0
Peru	-10.1	-13.3	-10.0	-31.0
Jamaica	-19.8	-15.3	-34.0	-25.1
Ecuador	-9.3	-28.0	-20.1	-8.8
Turkey (1970)	-22.0	-32.0	-29.4	-41.8
Turkey (1978)	-18.1	-25.0	-22.1	-24.0

[a]The residual values in the year t+1, compared with that in the year t-1 (minus sign indicates deterioration)

[b]The average residual values in the three years after, compared with the average values in the three years before (minus sign indicates deterioration).

procedure are not statistically significant and a few of the country equations are not well determined. Another way to test the effectiveness of devaluation is the "before-and-after test". The advantage of this test is its simplicity and it provides a general indication of the effect of devaluation, with which the results of the residual test can be compared[†].

Besides examining the effect of devaluation on the trade and the current account balance, the before-and-after test also traces the effect of devaluation on 2 other variables which are considered by the IMF as secondary policy targets, namely the rate of growth of real income and the rate of inflation. This test simply examines the actual values of the trade balance, the current account balance, the rate of growth of real income, and the rate of inflation over 6 years (3 years before and 3 years after the month of devaluation). For each case these variables are examined using the impact effect and the long-run effect comparison procedures adopted in the previous section. The results of this test are shown in Table IV.10 and IV.11.

Table IV.10 shows that the impact effect on the trade balance is favourable in the case of Ghana, Mexico, and The Philippines (1962), while it is adverse in all other cases. The same is true for the impact effect on the current account balance. The rate of growth of real output deteriorated in all cases with the exception of the three countries cited above. Also, in all cases, the rate of inflation in the first year after devaluation, was higher than the year before. In the case of Ghana,

---

[†] Jamaica, Zaire, and the Sudan are excluded from this test as they receive a detailed investigation in subsequent chapters.

Table IV.10: Trade Balance, Current Account Balance, Growth Rate and Inflation Rate, Before and After Devaluation (one-year comparisons)

Country	Trade Balance[a]	Current Account[a]	Growth Rate[b]	Inflation Rate[b]
Mexico	31.0	18.0	1.2	1.2
Ghana	15.0	24.0	4.5	16.1
Philippines (1962)	21.0	1.2	0.3	0.4
Philippines (1970)	-2.3	-1.0	-0.9	10.1
Pakistan	-35.0	-24.0	-1.4	17.6
Guyana	-7.0	-8.0	-6.2	-2.5
Srilanka	-20.0	-1.0	-2.4	1.7
Peru	-14.0	-2.3	-3.9	10.2
Ecuador	-20.2	-14.0	-2.4	3.4
Turkey (1970)	-17.4	-8.6	4.6	4.6
Turkey (1978)	-27.0	-18.4	-3.3	38.5

[a] percentage change in the ratio of exports to imports

[b] the rate of growth in the 12 months before devaluation minus, the rate of growth in the 12 months after

Source: Computations based on data obtained from IMF Financial Statistic and various National sources.

Table IV.11: Trade Balance, Current Account, Growth Rate and Inflation Rate, Before and After Devaluation (comparing 3-year averages)

Country	Trade Balance[a]	Current Account[a]	Growth Rate[b]	Inflation Rate[b]
Mexico	53.0	23.0	0.20	8.6
Ghana	31.0	36.0	0.60	-11.1
Philippines (1962)	-2.4	-2.0	-0.10	2.9
Philippines (1970)	14.0	17.0	-1.2	9.5
Pakistan	-26.0	-18.2	-1.8	12.7
Guyana	-2.1	-5.0	-1.8	2.2
Srilanka	-24.1	-13.7	-5.1	6.4
Peru	-3.8	-4.2	-2.7	-0.50
Ecuador	18.6	23.0	-4.4	13.1
Turkey (1970)	-24.1	-4.8	-2.4	2.3
Turkey (1978)	-5.6	-20.0	-5.7	52.0

[a] percentage change in the average ratio of exports to imports

[b] the average rate of growth in the three years after, minus the average rate of growth in the three years before

Pakistan, and Turkey (1978) the former exceeded the latter by 16.1, 17.6 and 38% points respectively.

The comparison between the average values of the variables in the 3 years after with those in the 3 years before shows improvement in the trade balance and the balance on current account in 4 cases, they are Mexico, Ghana, The Phillipines (1970) and Ecuador; while they deteriorate in all other cases. The rate of growth of output shows a slight improvement in the case of Ghana and Mexico while it deteriorates in all other cases. This deterioration in output ranges between 0.10% in the case of The Phillipines to 57% in the case of Turkey (1970). Also, in all countries, with the exception of Ghana, the average rate of inflation in the 3 years after is higher than that in the 3 years before. In 5 countries the average inflation rate shows a marked acceleration in the period after devaluation, ranging between 6.4% points in the case of Srilanka to 52% in the case of Turkey (1978).

Summary and Conclusion

In the course of this analysis various tests have been conducted to assess the effectiveness of devaluation. The first criteria used for this purpose was the simple Marshall-Lerner condition. The Ordinary Least Squares Estimates of the trade model equation (4.6), indicated that none of the countries in the sample satisfy this condition. Only in the case of Mexico, in the Seemingly Unrelated Regression Estimates of the model of the current account balance, was a positive and significant terms of trade coefficient estimated.

When the residual method was used the results revealed that, for the sample of countries as a whole, the trade balance deteriorated over the period after devaluation. The current account balance improved slightly in the year t+1 then deteriorated sharply in the years t+2 and t+3.

When the residual values of the individual countries were examined, 4 cases showed a favourable impact effect on both the trade and the current account balance. These were Mexico, Ghana,and The Phillipines (1962 and 1970). In the long-run the trade balance deteriorated in all cases, with the exception of Ghana, while the current account deteriorated in all cases, with the exception of Ghana and The Phillipines (1962).

The before-and-after test gave support to these results showing favourable impact effects on the trade and the current account balances in 3 of the 4 cases cited above (the exception is The Phillipines 1970). As for the long-run effect, the before-and-after test showed trade balance improvements only in the case of Ghana and Mexico and current account improvements only in the case of Ghana, Mexico, Ecuador and The Phillipines (1970). Thus the long-run results of the before and after test are consistent with those of the residual test in all cases but The Phillipines (1970), Mexico, and Ecuador (with regard to the trade balance),and in all cases but Mexico, The Phillipines (1962) and Ecuador (with regard to the current account balance).

The results of all the tests conducted in this study give very little support to the claim that devaluation improves the balance of payments. In most countries under investigation, devaluation can be said to have caused large deteriorations in the external account. In addition

to this, there is evidence that devaluation and its supportive policies, cause deterioration in the rate of growth of output and acceleration in the rate of inflation.

However these results must be treated with care for it takes no account of the individual country circumstance which might have influenced the results. For example, the 1972 devaluation in Pakistan coincided with the oil crisis which had considerable inflationary and recessionary effects. Also in Mexico and Ecuador the devaluation policy coincided with the period when these countries stepped up their production of petroleum which had appreciable effects on their external and internal sectors. The remainder of this study will be devoted to detailed case studies of The Sudan, Jamaica, and Zaire which will examine the effects of the IMF conditionality and devaluation in the light of more detailed knowledge of individual country circumstances.

CHAPTER FIVE

CONDITIONALITY: THE EXPERIENCE OF THE SUDAN

Introduction

This chapter deals with the economic and political events surrounding the IMF intervention in The Sudan. The chapter provides an economic and political background of The Sudan and analyzes the Sudanese planning experience and its relation to the balance of payments crisis in 1978. It provides an account of the devaluation debate between the Sudanese, and IMF officials prior to the IMF intervention. It also examines the Fund's conditionality accompanying the 1978 Stand-by Arrangement, the 1979 Extended Arrangement, and the 1981 Second Stand-by Arrangement. Finally the chapter reports some of the economic and political implications of the IMF programmes.

Economic and Political Background

The Sudan is the largest country in Africa covering an area of about one million square miles, with an enormous agricultural potential, that has been only partially exploited. At present, the agricultural sector is the dominant sector in the economy. During the period 1974-77 the share of agriculture in the GDP amounted to 36% (see Table V.4), while the share of manufacturing and mining amounted to 9%. The significance of agriculture in the Sudanese economy is reflected by the fact that, it is the source of virtually all exports. The share of agriculture averaged

93% during 1976-78 with cotton taking the lion's share of 53% of total exports. Second in importance as a foreign exchange earner is the export of groundnuts with a share of 10%, followed by Sesame exports with an 8% share.

Besides being the major source of foreign exchange earnings, the Sudanese agricultural sector provides employment for over 70% of the labour force, and provides inputs for much of the country's economic activity. Agricultural activities take place mainly through publically administered irrigation schemes, the largest of which is the Gezira scheme which alone covers about 2 million acres, and employs 100,000 tenants as share croppers. The scheme specializes in the production of long- and medium-staple cotton, and groundnuts for export. Recently the cropping pattern of the scheme has been changed to allow the production of some import substitutes, namely wheat and rice.

On the side of imports, the country is heavily dependent on the import of basic consumer goods and foodstuffs which amounted to 41% of total imports in 1980. In the same year the share of capital goods and raw materials amounted to 26% and 33% respectively.

On the political front, The Sudan became formally independent from British colonial rule when a Sudanese civilian parliamentary government assumed office on January 1st 1956. In November 1958, the civilian government was overthrown and a military government headed by General Ibrahim Abboud was installed. The October 1964 Revolution restored the party-system until May 1969 when General Gaafar Numiery was led to power by the Free Officers Movement (an organization within the Sudanese Army) through a military coup.

Reading his first communique, General Numiery announced that the history of The Sudan had been *"a series of catastrophes"* because too many parties had been in power. He asserted that the political parties had been *"satellites of imperialism"*. Now it is time, he said, *"to set on the road of freedom and socialism"*.†

In May 1970 Numiery's Revolutionary Council, and Cabinet approved their first social and economic development plan covering a period of 5 years 1970-1975††. The plan was designed by Russian and Sudanese experts to lay the foundation of a strong socialist economy, free from foreign economic dominance and was said to *"involve far reaching political and economic consequences, especially for future generations"*‡. However, only the latter part of the above statement turned out to be true: one year following the implementation of the 5-year plan the Sudan faced its first foreign exchange crisis which called for IMF intervention.

The Planning Experience and the Development of the Crisis

The 5-year plan aimed at securing an increase in Gross Domestic Product of 7.6% per annum, and an increase in per capita income of 6.2% annually. These targets were to be achieved through a total investment expenditure of 385 million Sudanese pounds (Lsd) over the plan period. The plan placed great emphasis on the productive sectors of the economy, giving agriculture the largest share of 58.1% of total investment expenditure. The second largest share of 33.2% was allocated to industry, while the share of the services sector was 18.7%.

---

†Radio Broadcast by General Numiery, 25 May 1969.

††The Five-Year Plan 1970-1975 was introduced to supersede the then still existing Ten-Year Plan 1961/62-1970/71.

‡Bank of Sudan Annual Report 1970, p.19.

Being Socialist oriented, the plan assigned a leading role to the public sector with total investment equal to Lsd 215 million, or 55.8% of total investment expenditure with the remainder allocated to the private sector. Moreover, 52% of total public expenditure was allocated to the directly productive sectors, such as agriculture and industry, while the bulk of the private investment was allocated to housing.

The plan relied on internal resources to finance 48.8% of total public capital investment. This was to come mainly from government surpluses. The remaining 51.2% was to be financed by borrowing from socialist countries. There was to be no resort to deficit financing.

In a socialist spirit, and to strengthen the financial power needed to carry out the plan, the government undertook a series of nationalization measures. These included the nationalization of all foreign commerical banks, and foreign companies, as well as some domestically-owned private businesses. During the first year of the plan The Sudan concluded technical assistance and loan agreements (totalling Lsd 32 million) with a number of socialist countries to finance some of the projects in the plan. Included were loans from the Soviet Union, East Germany, the Democratic Republic of Korea and the People's Republic of China. The repayment of these loans were to begin after the establishment of the projects and were to be made through barter exchange of Sudanese goods[†].

[†] For these loans, see Bank of Sudan Annual Report 1970, p.88.

In the first year, only 73% of the year's plan was executed[†]. The shortfall in the implementation of the plan was mainly due to administrative problems[††]. The second year of the plan was interrupted by major political developments which not only changed the scope of the plan, but also the country's development philosophy.

In July 1971 Major Hashim Elatta (one of the original members of the Free Officers Movement which had seized power in May 1969), with the tacit support of the Sudanese Communist Party, overthrew the government of General Numiery. The new regime lasted only 3 days and on June 22 Numiery returned to power. Major Elatta and 16 of the leaders of the movement were put to death, including the Secretary General of the Sudanese Communist Party.

These developments embarrassed the Russians who were then deeply involved in the country's economic, and political affairs. In the event, the Sudan's relations with Russia and the Soviet-bloc deteriorated drastically and the country had to look to alternative sources to obtain the foreign assistance needed to complete the remaining 4 years of the plan. The only possible candidates were Western countries, pro-western Arab countries, and Western "International" Institutions. However, in the light of the 1970 nationalization and confiscation of foreign investments, aid from these sources seemed unlikely. In appreciation of this, the government amended the nationalization act and embarked on a series of denationalizations.

[†] The Plan's rate of implementation was calculated using various indicators of implementation such as, actual agricultural and industrial output, number of new hospitals, number of new schools ... etc., all compared with their targets. For this, see Progress Report on the Execution of the Five-Year Plan, 1970/7, 1971/2, p.1-2.

[††] *Ibid.*

Following the denationalization act foreign aid began to flow. In 1971 the Sudan received lsd 5.5 million from the Federal Republic of Germany for Sudan railways; lsd 14.1 million from the People's Republic of China to build a Sudanese-Chinese Friendship Palace; and the Kassala-Port Sudan Road; Lsd 1 million from the UK to purchase irrigation pumps, and Lsd 3.6 million from the American Commodity Credit Corporation to finance the country's imports of wheat from America. By the end of 1972 the Sudan concluded an agreement with the World Bank to finance, together with the American Agency for International Development and Kuwait, the Rahad agricultrual project. In the same year the Kenama sugar factory was initiated (which was to be financed jointly by the government of The Sudan, Kuwait, and the Lonhro Company).

In short, the types of loans which the Sudan received after 1971 were either tied by explicit stipulation of where they may be spent, (and in some cases subject to the further limitation with respect to the types of goods which may be purchased), or tied to projects initiated by lending sources, rather than projects initiated by the Sudanese Ministry of Planning. An example of one such project, was the Kenana sugar factory which was drawn up by Kahalil Osman the Sudanese Chairman of the Kuwaiti Company, Gulf International, and Mr. Roland of the Lonhro Company.

As a result, the guidelines for economic development outlined by the 5-year Plan became impossible to follow. In November 1972, facing this difficulty, the Sudanese authorities decided to supplement the Plan with a 5-year interim programme of action[†]. This action programme was

---

[†] For an assessment of the 5-year plan, see Nimeri, S. (1977) The Five-Year Plan: Some Aspects of the Plan and its Performance, (Research and Development Centre, University of Khartoum), January.

to incorporate projects in the field of transportation and industry, as dictated by the type of loans received from western sources, and to make room for projects financed by direct private foreign investment. The result was a collection of a number of different projects that hardly formed an integrated development programme.

The inflow of foreign capital continued during 1973 and reached a peak of Lsd 123-4 million. By the end of 1975 Sudan's total outstanding debt was Lsd 371.7 million. Despite this large capital inflow, the average rate of plan implementation in the public sector was only 52.4% while actual expenditure was 16% larger than planned expenditure . The big jump in expenditure is explained by the marked escalation of project costs. The estimated costs of the Kenana sugar factory, for example, rose from Lsd 55 million in 1973, to Lsd 200 million in 1975 (see Table V.1). The Sudanese planners blamed the escalation of costs on the 1973 oil crisis, and its inflationary consequences. This together with a 20% devaluation during the period 1972-73, were held responsible for the poor implementation ratio[†] .

The 5-year Plan hardly achieved its targets. The overall rate of growth recorded during the plan period was an estimated 4% against a target of 7.6%. The majority of the projects were not completed, while others were completed but inoperative owing to technical difficulties.

[†] Prior to 1970 the Sudan adopted a multiple exchange rate system, with an official rate of US $ 2.87 per 1 Lsd; an incentive rate of US $ 1.75 per 1 Lsd; and a black market rate of US $ 1.33 per 1 lsd. In March 1972 the official rate was depreciated to an effective rate of US $ 2.50. This together with the government's decision to follow the 1971 devaluation of the American dollar, and the currency re-alignments of 1973, meant a 20% devaluation by mid-1973.

Table V.1: Cost Escalation in Some Development Project During the Sudan's 5-Year Plan (1970-1975)

Project	Estimated Cost (in Lsd million) 1973	1974	1975
Kenana Sugar Factory	55	129	200
Khartoum-Portsudan Pipeline	8	40	97
El Rahad Scheme	33	95	125

Source: Ministry of Planning, Khartoum.

The poor performance of the plan can best be seen by comparing the planned balance of payments with what was actually achieved (see Table V.2).

The trade balance which was projected to achieve a surplus of 20 million Sudanese pounds, recorded a deficit of Lsd 122.2 million. The deficit was caused by both imports surpassing, and exports falling short of plan expectations. The volume of exports decreased by an average rate of 5.2% over the plan period. If it had not been for the sharp rise in export prices (averaging 23.2%) the shorfall below plan targets would have been even more pronounced. There was also a sharp increase in the value of imports resulting from a 7.2% increase in import volume and a 27% rise in import prices. Moreover, contrary to the plan expectations of a contracting deficit on invisible account, the deficit grew at a rapid rate, mainly due to the fast growth of invisible payments particularly interest on foreign loans and payments on transportation, and travel expenditure.

Table V.2: The Performance of the Balance of Payments During the Five-Year Plan (in Lsd million)

Year	Trade Balance		Invisible Balance		Capital Account		Balance of Payments	
	Planned	Actual	Planned	Actual	Planned	Actual	Planned	Actual
1970/71	4.0	-12.5	-11.5	-10.6	-10.9	-0.4	3.4	-21.6
1971/72	9.0	-16.9	-11.3	-13.3	8.9	5.8	6.6	-22.2
1972/73	14.0	17.7	-11.0	-17.2	6.8	0.4	9.8	0.4
1973/74	18.0	-3.9	-10.2	-26.6	8.9	15.3	16.7	-15.6
1974/75	20.0	-122.2	-9.3	-38.1	9.2	108.6	19.9	-51.9

Source: The Five-Year Plan of Economic and Social Development, 1970/71-1974/75 vol.1970, and Bank of Sudan Annual Reports.

Over the plan period The Sudan became more dependent on foreign official borrowing, mostly from Arab countries, to finance its external deficit. Gross receipts under official loans expanded very fast during 1970-1975. Nearly two thirds of this capital came from Saudi Arabia and Kuwait. As a result, the country's outstanding foreign debt increased from Lsd 110.6 million in 1970 to Lsd 372 million in 1975. Total loan repayment increased from Lsd million in 1970 to lsd 99.1 million in 1975.

The high hopes and expectations, which were dashed by the poor performance of the 5-year plan, were raised again by a new idea: that of making Sudan the "Breadbasket of the Middle East". This idea was promoted by the Arab oil producers to reduce their dependency on food imports from the West†.

To promote itself as a major food supplier in the Middle East, the government of The Sudan began to borrow heavily from Kuwait and Saudi Arabia. Foreign borrowing during that period was *"a hysterical process"* as described by a former Minister.

> *"Any Minister could go to the President with a project, tell him it was a good idea, and get his go-ahead for it"*††.

The new loans which were contracted during the period 1975-1976 alone amounted to US $ 1.8 billion.

---

† "Sudan Review", The Economist, March 18, 1978, pp.3-4.

††A former Sudanese Minister, reported in the Financial Times, August 19, 1980.

Structural Imbalance and the Foreign Exchange Crisis

It has been mentioned previously that the majority of foreign loans which The Sudan contracted to finance the 5-year plan, were either tied to specific projects, or to the purchase of certain commodities. This had a profound effect on the distribution of investment expenditure among the various sectors of the economy. The original 5-year plan allocated 38% of total expenditure to the agricultural sector, and 14% to the transport and communications sector. The amended plan gave the transport sector the lion's share of total investment, amounting to 32%, while the agricultural sector received 27% (see Table V.3). Moreover, the amended plan made no allowance for investment in electricity and power.

Table V.3: The Distribution of Public Investment (1970/75) (%)

Sector	Original Plan	Amended Plan	Actual
Agriculture	38	23	27
Industry and Mining	17	18	21
Power	6	6	0
Transport and Communications	14	34	32
Services	19	14	16
Others	6	6	4
TOTAL	100	100	100

Source: Nimeri (1977) *op. cit.*, p.15.

This marked shift in emphasis from agriculture to transport and communications, together with the neglect of the power sector, were to a large extent responsible for the structural imbalance underlying the Sudan's foreign exchange crisis in the period following 1977. During the period 1970-1977 the agricultural sector, which employs over 70% of the labour force, grew only half as fast as the rest of the economy. The share of agriculture in the GDP declined from 42.1% in 1970/71 to 32.7 in 1976/77, recording a negative growth rate of 10.5% (see Table V.4). At the same time the share of the transport and communication sector showed an annual growth rate of 12.1%, while the share of industry and mining remained virtually stagnant. The transportation and communications sectors was in fact growing at a rate faster than all other sectors of the economy (See Table V.4 overleaf.)

This emphasis on transportation was justified on the grounds that it would strengthen the physical infrastructure, eliminate bottlenecks, and provide a foundation for accelerated development in the future[†]. It is true that the country's system of transportation was inadequate, but this did not alone justify the large investments on transportation financed by foreign borrowing. There was excess capacity in the transport sector, estimated to range between 40 and 65% in 1970[††]. The adequacy of transportation could have been markedly improved if the idle capacity had been properly utilized. Moreover, an integrated plan should take into account not only the availability of foreign exchange to finance projects, but also how these projects would generate foreign exchange for loan repayments. This aspect must be considered when allocating investment expenditure between the various sectors of the economy.

[†] Nimeri (1977) *op. cit.*, p.25.

[††] *Ibid.*

Table V.4: Sudan's Gross Domestic Product by Economic Activity (%)

Sector	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
Agriculture	42.1	40.7	38.4	41.4	38.9	33.9	33.3	32.7
Transport and Communication	5.0	5.2	6.9	6.0	5.9	10.4	11.0	12.0
Manufacturing and Mining	8.8	8.7	9.2	8.9	9.5	8.9	8.7	8.6
Electricity and Water	2.0	1.5	1.4	1.6	1.4	1.3	1.4	1.3
Others	42.1	43.9	44.1	42.1	44.3	45.5	36.9	45.4

Source: Calculated from data supplied by The Bank of Sudan

Table V.5: Sudan: Terms and Maturity Structure on External Public Debt (end, December 1980)

(Lsd m.)

Annual Rate of Interest (%)	Original Maturity 1-5 years	5-10 years	10-15 years	15+ years	TOTAL
None	-	0.1	12.1	52.5	64.7
1 to 3	12.9	2.5	16.9	29.0	61.3
3 to 6	7.4	187.4	19.3	15.1	229.2
More than 6	5.2	138.0	0.5	3.1	146.8
TOTAL	25.5	328.0	48.8	99.7	502.0

Source: Bank of Sudan

During the period 1970-1977 drawings on external loans which were allocated to the transport sector amounted to 42.3% of total foreign loans, while that of agriculture and industry were 20.4% and 10.3% respectively. This allocation was particularly alarming given the terms and maturity structure of the loans (see Table V.5). Of the total external public debt which stood at Lsd 502 million in 1978, Lsd 328 million were short-term loans with 5 to 10 years maturity. The rate of interest charged on 41% of these loans was higher than 6%. This meant that within a fairly short period of time export earnings needed to be increased substantially to meet the country's imports and debt repayment bills. In the absence of this, the country would be increasingly dependent on additional loans to finance the balance of payment deficit. Under such circumstances a foreign exchange crisis would arise when capital inflows dried up.

Over the planning period 1970-1975 the projects aimed at increasing export earning capacity were limited to the Rahad agricultural scheme, and 3 sugar factories. The Rahad scheme, which was initiated in accordance with the World Bank's Rural Development Strategy in The Sudan, was meant to produce cotton and groundnuts for export. The scheme was scheduled to be operative by 1976. However, the first phase was completed in 1977/78 with a small contribution to the export basket amounting to 5% of total cotton production. The 3 sugar factories, namely Kenana, Sinnar, and Asalaya were part of the government's plan to promote The Sudan as a major sugar exporting country by 1979. The sharp increase in import prices as a result of the accelerated inflation on an international scale, the growing disputes between the foreign financers of these projects, together with administrative and manpower constraints, made the completion of these projects impossible within their time

schedule. In 1980, The Sudan imported 64% of its sugar requirements.

In addition to this, the already existing export-oriented production units, and in particular the Gezira scheme, were completely neglected over the plan period. As a consequence, these projects failed not only to increase their contribution to the country's export earnings, but also to maintain their past contribution.

This situation was made worse by the government's decision to promote self-sufficiency in wheat and rice, following a sharp increase in the import price of cereals in 1975. As a result, the cotton acreage was reduced while that of wheat and rice was increased. This policy was not expected to reduce cotton production since average cotton yields were expected to increase. In fact, average yields declined, and hence total cotton output.

During the period 1970-1977 the volume of cotton exports deteriorated by an average rate of 1.3%. This was just offset by an increase in the production of other traditional exports, and the average rate of growth of total export volume remained virtually stagnant over the period. Yet, export proceeds increased (as a result of an increase in export prices) by an average of 13.3%. At the same time, import prices increased by 26.5% and the barter terms of trade moved against the Sudan by an average of 13.2%.

The combined effects of sluggish, export growth, and increased import prices had a marked influence on the country's external accounts. This is particularly true for the years following the 1973 oil crisis and its inflationary consequence (see Table V.6). The current account balance, which recorded a surplus of lsd 6.4 million in 1973, turned into a deficit of Lsd 103 million and Lsd 166.3 million in 1974 and 1975, respectively. At the same time a large proportion of the country's foreign debts began to

fall due, and in 1976 the ratio of debt repayment to export earnings reached a peak of 22%. Faced with this situation, the Sudan relied heavily on borrowings from Saudi Arabia, not only to finance the growing current account deficit, but also to repay past debts.

Under these circumstances, in April 1977 the government launched its second development plan. The 6-year plan (1977-1978) was a clear reflection of the change in the government's development philosophy. The idea of building an economically independent Sudan was abandoned. Instead the 6-year plan contained *"a well designed policy to attract foreign private investment in strategic fields of the economy"*, and *"a portfolio of well-prepared bankable development projects was made ready to attract private foreign capital"*[†]. (See Table V.6 overleaf.) The dream of making the Sudan the *"bread basket of the Middle East"*, was incorporated in the Plan in the form of projects to be financed jointly by Saudi Arabia, Kuwait, the Sudanese private sector, and the government of the Sudan. The plan projected that sufficient foreign capital would be available to finance public development expenditure. These projections were said to be based on *"informed judgement taking into consideration past experience, current situation, and future possibilities"*[††].

Contrary to the above statement, the developments which took place during the first year of the plan brought the inflow of capital to a complete halt. Early in 1977 the IMF acquired new powers through the creation of the Witteveen Facility (or the Supplementary Financing Facility).

[†] The Six-Year Plan of Economic and Social Development (1977), Ministry of National Planning, Khartoum, April, p.63.

[††] *Ibid.*, p.63.

Table V.6: Sudan: Balance of Payments, 1969-1977 (in million Lsd)

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Exports	92.4	101.8	110.8	116.3	157.7	139.0	146.3	209.2	230.3
Imports	89.8	104.5	114.5	122.0	130.2	207.0	284.4	239.4	245.9
Trade Balance	2.6	-2.8	-3.7	-5.9	27.5	-68.0	-138.1	-30.2	-15.6
Invisible Receipts	11.8	15.1	16.2	16.8	16.4	22.8	37.4	42.0	56.5
Invisible Payments	24.7	27.2	-27.3	32.7	37.5	57.8	62.9	96.6	76.2
Current Account	-10.3	-14.9	-14.8	-21.8	6.4	-103.0	-166.3	-64.8	-35.3
Capital Account									
Drawings	17.8	8.1	8.0	22.3	27.5	125.3	64.8	50.8	39.7
Repayments	4.5	7.6	11.3	12.2	17.1	27.3	31.3	26.8	21.7
Short-term Capital (net)	-0.7	-0.5	-1.7	-0.8	-1.0	8.2	3.1	6.7	24.4
Errors and Omissions	0.3	2.6	1.2	4.1	0.2	-1.7	0.7	0.9	-0.4
Monetary Movements[a]	2.0	12.3	18.6	8.4	-9.0	2.4	134.5	38.2	-28.4

[a]minus sign indicates surplus.

Source: Bank of Sudan Annual Reports

The Witteveen Facility meant that surplus countries would lend their surpluses to the IMF (instead of lending them directly to other countries), which would then re-lend, and impose its own conditions on each borrower. Having consented to be the major contributor to this facility, the Saudis were promised that the IMF would ensure the safety of their money by enforcing its strong disciplinary measures. This situation became even tighter when President Numiery declared his support for the Egyptian-Israeli peace initiative proposed by President Sadat of Eygpt on his visit to Jerusalem in November 1977. As a result, the Arab oil countries (including the Saudis who claimed to oppose the initiative) curtailed their financial assistance to The Sudan. Early in 1978, in the middle of severe shortages of basic food imports and fuel, the Saudis and other creditors made it clear that the flow of their financial assistance would be conditional upon the country's acceptance of an IMF arrangement. In June 1978 the Sudan signed a one-year stand-by arrangement with the IMF.

The Stand-By Arrangement and the Devaluation Debate

The reports prepared by the IMF and the World Bank mission to The Sudan, identified the country's foreign exchange crisis with an over-valued exchange rate and they argued for devaluation[†] . The immediate reaction of some Sudanese economic advisors was a complete rejection of the IMF proposal. This reaction was summed up by El Hassan:

[†] IMF Memoranda and IBRD Reports, Ministry of Finance, Internal Files.

> *"... although the Sudanese economy is currently characterized by rather serious internal and external imbalances, it is indeed doutbtful whether the conventional text-book prescription of devaluation is appropriate or relevant"*†.

In the event the Sudanese Minister of Finance formed a consulting panel to examine the Fund's devaluation proposal. In his submission El Hassan argued that irrespective of the economic theory backing the IMF proposal, the elasticities of demand for exports and imports play an important role in the success of any devaluation. He added:

> *"It is indeed surprising that despite the crucial importance of checking the elasticity magnitudes prior to the advocacy of adjusting the exchange rage, the recent IMF and IBRD proposals did not make any attempt to ascertain the values of elasticities in questions"*††.

He provided evidence that the demand for the country's exports and imports were extremely insensitive to price change with a Marshall-Lerner condition equal to 0.86.

On the other hand, the IMF officials admitted that

> *"... the demand for imports is likely to be inelastic in the short-run as imports have already been reduced to essentials by quantitiative restrictions"* ‡.

Yet they argued that by providing price incentives to producers, and hence increasing the supply of exports, devaluation would improve the balance of trade.

---

† El Hassan, A. M. (1978) "An Evaluation of the Adjustment in the Exchange Rate of the Sudanese Pound", (a paper submitted to the Consulting panel constituted by the Minister of Finance), March.

†† *Ibid.*

‡ IMF Memoranda *op. cit.*

This argument was also attacked by Sudanese officials who stated that the numerous structural rigidities that characterize the Sudanese economy, together with the highly inelastic nature of the supply of agriculture production which dominates Sudanese exports, mitigate against any immediate or even long-term increase in the supply of exports. The IMF officials responded to this criticism by amending their original note, which endorsed devaluation, stating that the improvement in the trade balance resulting from the proposed devaluation would

> *"probably be moderate in the short-term, but would become greater over time as the cropping pattern is adjusted, new land is brought under cultivation, and the Sudan moves into the production of the commodities which have a higher elasticity of demand"* †.

The economic logic underlying this IMF statement was weak. The adjustment of the cropping pattern, the bringing of new land under cultivation and the shift to the production of commodities with higher elasticity of demand, are all long-term measures, which, if desirable, can be achieved by administrative, or planning decision. This is particularly true because the bulk of the country's exports is produced by the public sector. It is only when all these measures are implemented, and the country shifts to the production of goods with higher price responsiveness, that the IMF statement makes sense. As a Sudanese official commented, the IMF logic is like putting the cart before the horse.

Considering the inflationary effects of devaluation, the Sudanese officials argued that devaluation would increase the budgetary cost of development expenditure substantially because of the large import content of such expenditure. According to the IMF's own estimates the proposed 25% devaluation of the Sudanese pound would result in a 24.3% increase

---

† IMF Memoranda, *op. cit.*

in the price of imported consumer goods. However, no estimates were presented for the price of capital goods, fuel, parts and materials needed for development.

On the question of the hardships which the inflationary consequences of devaluation might bring to the Sudanese people, the IMF officials argued that

> *"... in the countryside and for the lower income groups the import content of expenditure amounts too little so that the price effect would be less than 6-7%",*[†]

and that,

> *"the increase in the cost of living from the devaluation would affect mainly the urban population particularly the higher income group"*[††].

This statement was hardly convincing. To start with, the IMF's own estimates of price increases in the different items of imported consumer goods were much higher than the 6-7% mentioned above. Moreover. most of these items loom largely in the consumption basket of the low income groups. Examples from the IMF's own estimates are tea, coffee, deblan, and medicine with estimated price increases of 17.6%, 22.2%, 28.7% and 25% respectively[††]. Second, it is a text-book knowledge that inflation is self-propelling and cannot be confined to particular geographical areas. The economic burden of inflation, as measured by the loss of real income, does not fall on urban or rural population irrespective of their income source.

[†] IMF Memoranda, *op. cit.*

[††] *IBid.*

Given the country's poor foreign exchange situation, with the country's creditors pressing for the IMF measures, the devaluation debate was an academic exercise. On 15 February 1978, Mr. Osman Hashim, the Minister of Finance, surprised the Sudanese public not only by accepting the IMF conditions, but by supporting them too. In the government-owned newspaper, El Sahafa, he wrote:

> *"... the devaluation of the Sudanese pound will help to increase production in the agricultural sector and hence the income of farmers who represent the majority of our people. Devaluation will offer them more incentive to increase their production and their supply. This will restore domestic price stability and will increase the country's exportable surplus. ... Devaluation will stimulate the flow of foreign capital and strengthen our economic relation with the World. All of which will result in improving our balance of payments"*[†].

In June 1978, the Sudanese pound was devalued by 25%. In return, a stand-by arrangement of Lsd 10.4 million (SDR 21 million) was agreed, plus drawing on the Trust Fund of Lsd 15.1 million (SDR 30.2 million) and on the Compensatory Financing Facility of Lsd 12.9 million.

One year following the devaluation, the trade balance deteriorated drastically from a deficit of lsd 23.7 million to a deficit of lsd 83.7 million (see Table V.7). This was the result of a 25% increase in the value of imports, and a 2% decrease in the value of exports. The rise in the value of imports was caused entirely by the rise in import prices, the volume of imports remaining virtually unchanged. The fall in export proceeds was entirely due to a fall in cotton output, from 3.6 million to 2.5 million kantars. Export proceeds other than cotton, increased by 14%.

[†] 15th February, 1978.

Table V.7: Sudan: Trade Balance One Year Following Devaluation, June 1978 - June 1979 (in Lsd million)

	1977/78	1978/79
Exports	228.2	223.5
Cotton	122.1	102.6
Others	106.1	120.9
Imports	251.9	307.2
Government	102.7	99.8
Private	149.2	207.4
Trade Balance	-23.7	-83.7

Source: Calculated from Data Supplied by Bank of Sudan

As a direct consequence of the stand-by arrangement with the IMF, The Sudan received the sum of Lsd 26 million from Saudi Arabia. This included Lsd 10 million, representing drawings on US $ 200 million loan from Arabia to meet the repayment of Euro-dollar loans, and Lsd 16 million from the same donor for balance of payment support. In addition to that, 3 EEC members - West Germany, the U.K. and Netherlands - decided to write off outstanding loan repayments due to them, which amounted to Lsd 109 million.

The Extended Arrangement

In May 1979, 1 month before the expiry date of the stand-by arrangement, a 3-year Extended Fund Facility was agreed-totalling SDR 200 millions. According to the accompanying letter of intent, the objectives of the Extended Facility programme were to raise the sustainable rate of growth, to reduce the rate of inflation, and strengthen the balance of payments. The programme objectives were to be achieved by the following measures:

(a) liberalization of trade. This measure included the termination of the bilateral trade agreement with Egypt, and the abolition of all quantitative and qualitative restrictions on current payments;

(b) exchange reform. This included the replacement of the multiple exchange rate system with a dual market comprising an official and parallel rate. This was to be the first step towards a gradual unification of the exchange rate regime. The exchange reform measures also included the abolition of all exchange taxes and subsidies, and the nil-value license system;†

(c) a reduction of the overall government deficit, including tax increases on selected sales, increases in stamp duties, and many other fees and charges, reductions in subsidies on petrol and sugar, the curtailment of development expenditure, and concentration on on-going development projects;

---

† The nil-value license system allowed import licenses with provision of official foreign exchange. The system worked through "nil-value" importers borrowing hard currency from Sudanese working abroad against the promise of repayment in Sudanese currency.

(d) reductions in bank credit to the government and private sector; and

(e) the removal of all controls on profit repatriation to encourage private foreign investment.

Fifty percent of the SDR 200 million drawing was to be supplied through the Witteveen Facility. Of the total amount, SDR 37.8 million would be made available immediately, while the rest would be disbursed in 6-month installments, subject to a performance criteria. The Fund also promised to convene a rescheduling conference for Sudan's outstanding debt.

The performance criteria involved ceilings on bank claims on government and public enterprises. Subceilings were also imposed on claims on the private sector, and specialized banks (see Table V.8). These ceilings required that bank lending to the government should not exceed a Lsd 130 million limit in any fiscal year during the programme period, whereas Bank credit to the government amounted to Lsd 11.5 million in the fiscal year 1978/1979. The criteria also involved inflation targets of 19% and 12% to be achieved by June 1980 and June 1981, respectively.

The new Minister of Finance, Mr. Bader Eldien Sulaiman, who was appointed specially to carry out the IMF recommendations, stated that the aim of the policies was to stimulate production by allowing the free flow of imports. He described the governments control over imports and foreign exchange as *"fetters which bind the potential of everybody"*†.

---

† Financial Times, London, September 5th 1979.

Table V.8: Sudan: Ceilings on Monetary Expansion under the IMF Extended Arrangement June, 1979 - June 1981

(in m. Lsd)

End of Period: / Items:	June 1979 Ceiling	June 1979 Actual	June 1980 Ceiling	June 1980 Actual	December 1980 Ceiling	December 1980 Actual	March 1981 Ceiling	March 1981 Actual	June 1981 Ceiling	June 1981 Actual
a. Net Domestic Assets a=(b+d+e+f)	-	1022.4	1431.6	1331.7	1636.6	1611.04	1716.6	1760.6[a]	1751.6	1864.96[a]
b. Claims on Government (net)	-	670.6	823.4	715.5	913.4	776.9	943.4	813.58	953.4	909.96
c. Foreign Assets (Net)	-	-201.3	-	-301.9	-	-346.9	-	-355.0	-	-385.7
d. Claims on Public Entities	-	178.74	288.4	288.36	333.4	376.78[a]	348.4	405.8[a]	358.4	419.9[a]
e. Claims on Private Sector and Specialized Banks	-	407.24	525.9	502.92	620.9	595.8	665.9	653.6	685.9	675.74
f. Other Items (Net)	-	-234.4	-206.1	-193.1	-231.1	-158.5	-241.1	-134.37	-246.1	-163.5
g. Money Supply g=(b+c+d+e+f)	-	820.97	-	1006.7	-	1244.1	-	1383.6	-	1456.4

[a]indicates cases where ceiling is exceeded

Source: Ministry of Finance and National Economy

To ensure the free flow of trade, the IMF advocated the termination of the country's bilateral trade agreement with Egypt. The history of the bilateral trade agreements contracted by The Sudan with East-Europe and some developing countries, goes back to the early 1960's. The essence of these agreements was to provide the country with guaranteed export markets at contracted prices, enabling the country to avoid fluctuations in export proceeds, and their effects on domestic income, and employment. These fluctuations were particularly large in the case of The Sudan because of the country's dependence on one export crop namely cotton. The bilateral agreements also provided the country with imported goods at contracted prices.

The IMF objection to bilateral trade agreements springs directly from the Fund's "free" trade outlook which calls for the widest possible movement of goods and capital. Yet, this free trade philosophy is enforced only on poor countries, while various forms of trade agreements are practiced by developed countries which are leading members of the IMF. An example of this is the European Economic Community which encourages trade among its members and discourages trade from outside the community.

The IMF, however, did not object to the semi-formal bilateral trade agreement between the Sudan and the US, in the form of the so-called Sudan-United States Business Council. Formed in 1978, after the IMF stand-by arrangement, the objective of this council was said to promote trade and investment *between* the two countries. In 1977 the US exports to the Sudan amounted to US $ 14 million while that of the Sudan to the US were US $ 17.1 million. In 1980 the respective figures were US $ 235 million and US $ 14 million, recording a trade ratio of about 18:1 between the two countries.

> *... the problem here is that most of Sudan's products are grown by the United States, and no country imports things that it already has"*

was the explanation offered by Larry Nelson (an economic officer at the US embassy) for the highly skewed bilateral trade balance between the 2 countries[†]. It must be noted that the bilateral trade balance between the Sudan and Egypt recorded an average trade ratio of 2:3 during the period 1970-1979[††].

The extended programme included explicit conditions relating to the encouragement of direct foreign private investment through the relaxation of controls on profit repatriation. In March 1980, the Sudan-United States Business Council supported this policy by lobbying the passage of the New Investment Act which offered foreign investment guarantees against nationalization and sequestration[‡]. This Business Council includes, from one side, representatives of 40 US firms which aim at increasing their investment in the Sudan. From the other side, it includes Sudanese businessmen (some of whom have great influence on government policies) who are running an investment partnership with the US firms. This is one illustration of how IMF programmes, which poor consumers find hard to accept, often find support from a small but strong minority of people who benefit from them.

In the first year of the programme the Sudanese authorities carried out every single aspect of the extended arrangement. The dual exchange rate was established with an official rate of US $ 2=lsd I , and a parallel rate of US $ 1.25=Lsd 1. The official rate was to be used in 92%

---

† *Sudannow*, March 1981.

†† The bilateral agreement with Egypt was scheduled to be terminated by June 1980. In January 1980, and due to the large deterioration in Sudan's external accounts the termination was postponed. For more details, see Bank of Sudan Annual Report, 1980, p.51.

‡ Sudannow, *op. cit.*, p.22.

of exports (including cotton) and 70% of import transactions. While the parallel rate was to be used in all other transactions. This implied a 20% devaluation for cotton and 38% devaluation for 30% of imports, compared with their previous exchange rates.

On the fiscal side, subsidies on petrol and sugar were reduced; new taxes yielding lsd 100 million were introduced and development expenditure was curtailed. In agriculture farmers were made to grow more cotton, pay more for water charges, and restrict the expansion of wheat crops. On the monetary side net domestic assets of the Bank of Sudan (including government borrowing from the Central Bank, and Bank claims on private and public entities) were all kept well within their IMF ceilings (see Table V.8).

Despite all this, the general performance of the economy was worse than in the previous year. Even with the large increase in tax revenue, and the reduction in services, the overall government deficit continued to increase. In 1978/79 the the fiscal deficit which was Lsd 174.1 million widened to Lsd 340 million in 1979/80 and Lsd 480 million in 1980/81 (see Table V.9). This was attributed to the devaluation-induced increase in the government import bill, domestic inflation, and the valuing of the foreign components of development expenditure at the parallel exchange rate. With ceilings imposed on net domestic assets the government deficit was increasingly financed by external loans.

The increased taxes, the reduced government services, and domestic inflation brought immediate hardships to the majority of the population. These were reflected in street riots and a 5-day strike by railway workers demanding wage increases and reductions in the cost of living. The seriousness of these actions can be understood, if viewed against the background that strikes are illegal and punishable by imprisonment. The farmers of the Gezira scheme also went on strike and refused to grow

the 1979/80 cotton crop. The immediate cause of the strike was their disapproval of the IMF-endorsed policies which advocated the reallocation of crop areas in favour of cotton and against wheat. This meant a loss of income to the farmer since the Gezira scheme share cropping formula entitled the government to share cotton proceeds while wheat proceeds were fully earned by the farmer.

The strike caused a delay in sowing and inadequate irrigation. Consequently cotton output dropped by 32%. However, this was more than compensated for by the increase in export prices in domestic currency, and cotton proceeds increased by Lsd 24.2 million between June 1979 and June 1980. At the same time export supply other than cotton, dropped by 21% while export proceeds rose from Lsd 139.9 million to lsd 207.4 million (see Table V.10).

Despite the large increase in export proceeds, the trade balance widened sharply from a deficit of Lsd 83.7 million in 1978/79, to a deficit of Lsd 199.3 million in 1979/80. This adverse out-turn resulted mainly from the dramatic increase in the money value of imports from Lsd 307.2 million in 1978/79 to Lsd 488.2 million in 1979/80. Within this increase government imports rose by Lsd 95.4 million, while private imports increased by Lsd 85.6 million.

According to the Bank of Sudan, the marked rise in government imports was due to the increase in the prices of petroleum, raw materials and other essential consumer goods. The increase in private imports was said to be due to the expansion of private sector business enhanced by the newly launched policy of trade liberalization[†].

[†] Bank of Sudan Annual Report, 1979, 1980.

Table V.9: Sudan: Fiscal Magnitudes, 1974/75-1980/81 (in million Lsd)

	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Government Revenue	287.8	332.0	388.4	451.6	633.1	742.1	848.2
Government Expenditure	-264.0	-303.2	-351.2	-409.8	-575.3	-824.0	-1038.0
Development Expenditure	-102.4	-11.31	-216.4	-185.6	-169.4	-137.3	-156.2
Public Entites Position (net)	-43.9	-12.3	-3.0	-4.0	-73.2	-129.0	-141.6
Other Public Operations (net)	-40.1	-33.7	12.7	8.5	5.4	8.3	7.6
Government Overall Position[a]	-162.6	-130.3	-169.5	-139.3	-179.3	-340.0	-480.0
Finance of Deficit	162.6	130.3	169.5	139.3	179.3	340.0	480.0
External Loans	103.6	22.5	9.9	4.4	67.8	190.1	350.0
Bank Financing	59.0	107.8	-159.6	134.9	111.5	414.9	130.0

[a] minus sign indicates deficit

Source: Bank of Sudan Annual Reports, Issues, 1975, 1979, 1980 and data supplied by the Bank

As a result of the abolition of the nil-value system of import (thereby leading to channelling the savings of Sudanese nationals working abroad through commercial banks) invisible receipts increased from Lsd 120.2 million in June 1979 to Lsd 237.3 in June 1980. Accordingly, the invisible account recorded a surplus of Lsd 72.1 million. This was far from sufficient to bridge the trade deficit, and the current account recorded a deficit of Lsd 127.2 million in June 1980, compared with a deficit of Lsd 77.9 million in June 1979.

During the first year of the programme the IMF made available an amount of Lsd 89.6 million. Repurchases from the Fund amounted to lsd 22.3 million. The net inflow which amounted to Lsd 67.3 million,was only half the current account deficit. Apart from an amount of Lsd 55 million from Saudi Arabia, capital inflows from other sources were not attracted by the IMF agreement.

Under the auspices of the IMF, and within the framework of the so-called consortium of Sudan support, meetings to reschedule Sudan's official debt of US $ 850 million (Lsd 425 million) were held with the country's principal creditor nations and International Agencies. In March 1980 an agreement was reached to reschedule the country's official debt. As stated by Payer (1974), the members of the aid consortium are not altruistic aid-givers, but governments interested in seeing that the countries which provide markets for their products do not collapse completely, renege on existing debts, or withdraw from the Western trade system[†]. In 1980 about 90% of Sudan's imports were from Western countries.

[†] Payer (1974) *op. cit.*, pp.26-33.

Table V.10: Sudan's Balance of Payments 1977/78-1979/80 (in Million Sudanese Pounds)

	1977/78	1978/79	1979/80
Exports	228.2	223.5	288.9
Cotton	122.1	102.6	139.2
Others	106.1	120.9	149.7
Imports	251.9	307.2	488.2
Government	102.7	99.8	195.2
Private	149.2	207.4	293.0
Trade Balance	-23.7	-83.7	-199.3
Invisible Receipts	115.5	120.2	237.3
Invisible Payments	138.8	114.4	165.2
Current Account	-47.0	-77.9	-127.2
Official Capital Transfers	+1.0	+78.3	+80.2
Drawings	27.4	100.4	123.2
Repayments	-26.4	-22.1	-43.0
Net Errors and Omissions[a]	+16.8	+17.1	7.5
Balance of Payments (-=deficit)	-29.2	+17.5	-39.5
Monetary Movements (-=surplus)	+29.2	-17.5	+39.5

Source: Own calculations based on data supplied by bank of sudan

[a]Includes miscellaneous short-term capital movement and compensations to nationalized banks and companies

As for the country's commercial debt, a rescheduling agreement with its commercial bank creditors (the Club Banks) proved difficult to come by. In the initial negotiations the Club banks proposed re scheduling terms which included: 3-years grace period, 7-year maturity on loans, and a possible US $ 100 million new money facility. In return, the country was to resume repayments of arrears of interest as well as regular payments on current and refinancing interest. The Sudanese negotiators described these terms as impossible to fulfill and negotiations broke down with the two sides far apart. By October 1980 it became apparent that what rescheduling terms the Sudan would be able to meet would depend crucially on additional IMF assistance. Consequently, the original Extended Arrangement of SDR 200 million was augmented by SDR 227 million(to be made available by the IMF subject to the performance criteria of the original agreement). The augmented agreement helped to restore dialogue between The Sudan and the "Club Banks". However it took Morgan Grenfell (a British banker appointed to advise the government on rescheduling its debt), and a team of foreign experts, a complete year to draw a rescheduling offer acceptable to the commercial banks. By the time the offer was made, in November 1981, The Sudan had already used about 90% of the total amount made available by the IMF under the original, and the augmented Extended Arrangement.

In December 1981, five months before the expiry date of the 1979 agreement, The Sudan concluded an additional one-year stand-by arrangementof Lsd 126.3 million, containing further disciplinary measures. This time the IMF conditions involved the abolition of the dual exchange

rate, and the establishment of a single exchange rate at US $ 1.25 Lsd. This implied a 37% devaluation in the official exchange rate which was then applied to approximately 90% of exports and 70% of imports. In addition, the IMF pressurized the Sudanese government to abolish the share cropping formula between the farmers and the government in the Gezira scheme (the Joint account system) and to establish the individual account system[†].

Thus at a time when inflation was running at a rate of 63%, the country had to devalue for the third time in 4 years. The second IMF measure namely the establishment of the individual account system was justified on the grounds that the latter would increase production by promoting the optimal allocation of resources. Although it is not within the scope of this study to compare the individual account system, with the joint account system it must be noted that the idea of the individual account system was not new. It was first proposed by the World Bank in its 1966 Gezira Study Mission, which proposed this idea in the so-called "Rist Report"[††]. Since that time the Sudanese authorities had resisted the implementation of the individual account system because of its political and social implications . In 1981, as a result of its weak bargaining position with the IMF, the Sudanese authorities gave way to the IMF-IBRD pressures, and the individual account system was implemented, starting from the 1981/82 agricultural season.

[†] The joint account and profit partnership system is a share-cropping arrangement between the tenants and the government, such that, 47% of the net divisible returns of the cotton crop would go to the tenants; while for all other crops net profits are exclusively the tenant's. Under the individual account system the tenants are charged with all inputs and services provided by the government, and are paid all the value of their produce.

[††] IBRD, The Rist Report, Gezira Study Mission 1966

Table V.11: Sudan External Public Debt Outstanding (in Lsd million)

Credit Countries and Agencies	1978	1979	1980
I.B.R.D.	16.8	13.4	8.9
I.D.A.	22.2	22.7	24.7
Trust Fund	-	12.0	23.7
West Germany	15.4	15.4	15.3
United Kingdom	3.5	2.1	0.8
Italy	1.6	1.6	1.4
Denmark	0.5	0.5	0.5
France	-	-	-
Holland	-	-	-
U.S.A.	7.4	14.1	6.4
Kuwait	70.0	54.6	61.2
Saudi Arabia	49.8	174.5	199.6
Libya	6.1	6.1	6.1
Algeria	0.1	0.1	0.1
Yugoslavia	0.6	0.6	0.5
Poland	-	-	0.8
Czechoslovakia	0.3	0.3	0.3
East Germany	0.7	0.7	0.6
A.R. of Egypt	0.6	0.6	0.6
Abu Dhabie	21.1	21.1	21.1
China People's Republic	2.1	2.1	2.1
Union Bank of Switzerland	0.2	0.2	0.2
African Development Bank	1.2	1.2	1.2
Euro-Dollar Loan	59.6	54.2	47.5
Quatar	4.9	4.9	4.9
First Chicago and UBAF	6.7	6.7	11.7
Iran	15.2	15.2	15.2
Arab Investment Co.	1.1	1.1	1.1
Arab Fund	24.1	5.8	21.8
Societe Commerical Cereal (Wheat Facility)	1.1	1.1	1.1
Iraq	21.6	21.6	21.6
O.P.E.C.	2.6	2.6	2.6
USSR	-	1.5	-
TOTAL	359.1	458.6	502.0

Source: Bank of Sudan

This provides a classic example how the World Bank and the IMF work together to impose their policy conditions on developing countries. The 1966 agreement between the two institutions clarifies the nature of the Fund Bank teamwork. The essence of this agreement is that the Fund has the primary responsibility in matters related to exchange rates, balance of payments and modes of adjustment. A World Bank mission visiting a troubled country must adopt the Fund's established views regarding these matters. On the other hand the Bank has primary responsibility with regard to project evaluation, and development programmes as well as development priorities. In such matters the Fund adopts the Bank's views and enforces them, as was seen in the case of The Sudan.

Summary and Conclusion

The preceding analysis has shown how The Sudan's dream of socialist economic development turned into a nightmare of foreign exchange crisis, economic collapse, and IMF intervention. The point of departure came when The Sudan turned to Western countries seeking their assistance to finance the 5-year plan which was drawn by Russian experts. The aid-tying practiced by Western countries led to a remarkable change in the project specification of the original 5-year plan, diverting investment to the transportation and communication sector, at the cost of neglecting the agricultural sector (the foreign exchange earner) and the power sector. For the same reason a large proportion of the investment expenditure of the plan, financed prestige projects which had no appreciable impact on output. The outcome was the failure of the plan to achieve its desired economic and social objectives. The nationalization

of private domestic and foreign businesses, and the transfer of their ownership to the government, which marked the first move towards socialism, was replaced by denationalization and an open-door policy to foreign investment. The country's debt repayment capacity deteriorated and outstanding debts accumulated. Being dependent on foreign aid to finance its payments deficits, the consequent drying up of capital inflows caused the country its first major foreign exchange crisis; and hence the IMF intervention.

The views of Sudanese economists and government officials were disregarded and the Fund imposed its standard policy prescriptions, of devaluation, curtailment of government expenditure and cuts in the money supply. The Sudanese pound was devalued from 2.8 US dollars in 1977 to only 0.76 cents in 1982. In addition, the Fund imposed liberalization of trade, the unification of the exchange rate system and the privatization of the production relations in the Gezira scheme which was marked by the introduction of the individual account system. The following chapter will examine the appropriateness of the IMF measures, and their effects, with emphasis on the effect of devaluation.

CHAPTER SIX

THE IMF ECONOMICS IN THE SUDAN

Introduction

The IMF intervention in the Sudan took the form of 3 IMF agreements: the 1978 Stand-By Arrangement, the 1979 Extended Arrangement and the 1981 Stand-By Arrangement. The content of these 3 agreements was an integrated IMF stabilization programme aimed at improving the country's foreign exchange position. The purpose of this chapter is to evaluate this IMF programme with respect to both the appropriateness of the diagnosis and the effectiveness of prescriptions. To this end the following key statements made by the IMF officials in their note endorsing the Fund's programme are examined†.

(a) The Sudanese exchange rate is overvalued as inflation in the Sudan had been going on at a rate which exceeded the price inflation experienced by the country's main trading partners;

(b) The agricultural sector suffers from distortions in the incentive pattern, and devaluation would provide sufficient incentives for producers to increase supply;

---

† They are also cited by El Hassan (1978) *op. cit.*

(c) Liberalization of trade and simplification of the exchange regime would allow a free flow of imports, which would provide the agricultural export sector with vitally needed imports;

(d) The Sudanese economy is characterized by monetary disequilibrium which must be restored. The major factor behind this disequilibrium is the government deficit which was increasingly financed by domestic credit; and

(e) If monetary disequilibrium is not restored the need for further exchange adjustment would reappear.

In the light of these statements the IMF policy prescriptions can be interpreted as follows: the devaluation policy was to put the Sudanese exchange rate in line with those of its trading partners, thereby providing the price incentive necessary for the expansion of exports. This would be supported by anti-inflationary policies (including the curtailment of bank credit and government expenditure) which were necessary to maintain the price incentives in the economy. The IMF aid plus the inflow of funds from other sources (which would be triggered by the IMF programme) would provide the foreign exchange required to finance such imports.

An IMF official who has become closely involved in the formulation of the Sudanese economic policy wrote†:

> *"... a devaluation aimed at the expansion of the external sector would have to be backed by the availability of considerable foreign exchange to alleviate existing shortages and to generate a supply momentum in the economy. The infusion of imports which such foreign exchange a cushion could finance, would also limit price increases to the direct effects of devaluation, at least in the short-run"*†.

---

† This IMF official is K. Nashashibi - a member of the 1978 IMF mission who since then has become closely involved in Sudanese economic policy making.

The above statements and their interpretations would be the subject matter of our empirical examination of the appropriateness of the Fund diagnosis and the effectiveness of prescription.

Sources of Domestic Inflation in The Sudan

In the four years 1967-1970 import prices increased at an annual rate of 8.6% while domestic prices increased by 3%. In the following seven years 1970-1977, import prices and domestic inflation accelerated recording an annual rate of about 20% and 14% respectively (Table VI.1). Throughout the time period considered (1967-1977), it is evident that, with the exception of the year 1972, large increases in import prices were associated with large increases in domestic prices.

In 1973 the import price index increased sharply by 22.6%. This increase was in large part due to the 1971 devaluation of the Sudanese pound following the devaluation of the American dollar, together with the realignment of currency values which meant an effective devaluation of about 20% by mid-1973. In that year domestic prices increased by 15.3%. In 1974, as a result of the oil crisis, and the consequent inflation which covered the western world, import prices increased by 62.3%, while domestic prices increased by 26.1%. In 1976 when the oil inflation subsided domestic prices increased by only 2%.

In seeking to quantify the impact of imported prices use can be made of the result obtained in Chapter Three: that a 1% change in import prices will lead to a 0.48% change in domestic prices. This figure, multiplied by the annual increase in import prices, gives an approximate

estimate of the short-run contribution of imported inflation, to domestic inflation. The results of this simple method are shown in Table VI.1 Column C. The table shows that the contribution of import prices to domestic inflation fluctuated widely over the period. The year 1974 emerged as the period in which import prices had the largest impact on domestic prices. In that year the estimated contribution of import prices was larger than the actual increase in domestic prices. This may be partly due to the fact that it would take time for import price increases to work themselves to domestic prices; and partly due to the government subsidization of wheat, petroleum, sugar, cooking oil, and other imported essentials, which amounted to over 20% of total imports. Under such a situation part of the increase in import prices would be reflected in the government subsidy bill rather than in domestic prices. (See Table VI.1 overleaf.)

The calculations shown in Column C reflects only the short-run effect of import prices on domestic prices. The long-run effects would include these initial impulses as well as their subsequent round effects on domestic inflation.

In The Sudan, despite the severe restrictive government policies towards trade unions and strikes, the role of the trade unions and other pressure groups in propagating such impulses cannot be disregarded. During the period 1975-77 employees of the public corporations, secured a 35% increase in wages and salaries. This was followed by the so-called job evaluation and classification scheme which increased the wages and salaries of all other government employees by an average of 50%. This job evaluation

Table VI.1: The Contribution of Imported Inflation to Domestic Inflation (% change)

Year	Prices		% Contribution of Imported Inflation	
	Import (A)	Domestic (B)	Short Run (C)	Long Run (D)
1968	-6.9	-10.0	-33.0	-59.0
1969	10.0	12.6	38.1	68.3
1970	4.6	3.9	56.0	100.0
1971	7.4	4.0	90.0	163.0
1972	8.9	13.5	31.9	76.3
1973	22.6	15.3	70.1	126.8
1974	62.3	26.1	110.0	205.4
1975	23.1	23.6	46.6	84.7
1976	0.0	2.1	0.0	0.0
1977	11.9	16.7	34.1	83.0

Note: $C = (\frac{A \times 0.48}{B}) \times 100$ and $D = (\frac{A \times 0.86}{B}) \times 100$

Source: Calculations based on the results of Chapter Three

and classification scheme was undertaken by the government (the largest employer in the country) to overcome the general political discontent resulting from the loss of real income consequent upon the oil inflation. Yet many trade unions and pressure groups were unhappy with these increases, and through strikes, and the threat to strike managed to secure large additional increases. They included medical doctors, Central Bank employees, teachers, engineers and judges. The effect can be seen from the government wage bill which more than doubled during 1972/73-1979/80 (Table VI.2).

Table VI.2: The Government Wage Bill (in Lsd million)

Fiscal Year	Wage Bill
1972/73	43.7
1973/74	33.6
1974/75	43.8
1975/76	45.1
1976/77	50.0
1977/78	55.3
1978/79	64.6
1979/80	92.0

Source: Ministry of Finance

In Chapter Three it was estimated that, money wages would rise by 0.79% as a result of a 1% rise in domestic prices, causing domestic prices to rise in the long-run by 0.86%, as a result of a 1% increase in import prices. Table VI.1 Column D quantifies the long-run effect of import price on domestic prices using this result. This computation shows that in 4 years, 1967, 1971, 1973 and 1974 the estimated contribution of import prices to domestic inflation was larger than the actual increase in domestic prices. As noted before this might partly be explained by the government's subsidization policy which shields the domestic price of some essential imported goods from the effect of imported inflation. In all other years, with the exception of 1968, the estimated long-run contribution of imported inflation to domestic inflation is also very high ranging between 68% in 1969 to 100% in 1970 .

In tracing the sources of domestic inflation, reference must also be made to the monetary and fiscal policies. The aggregates shown in Table VI.3 reveal that government current and development expenditure grew rapidly over the period 1970/71-1977/78. During this period the growth of government expenditure was not matched by an equal growth of government revenue, leading to a widening deficit which was increasingly financed by borrowing from the banking system. This has been the major factor behind the expansion of net domestic assets. (See Table VI.3 overleaf.)

A simple method which is often used to estimate the contribution of the money supply to domestic inflation is to compare the rate of monetary growth with that of real income, on the assumption that inflation is the result of the difference between the two. The application of this method to the Sudan is shown in Table VI.4. It reveals that there has been a big excess of monetary growth from 1972 to 1977. In all these years, with the exception of 1977, large excess increases

Table VI.3: Sudan: Fiscal Magnitudes and Net Domestic Assets (in Lsd million)

	1970/71	1971/72	1972/73	1973/74	1974/75	1975/76	1976/77	1977/78
Government Revenue	114.5	163.7	176.3	205.9	287.8	233.0	388.4	451.8
Current Expenditure	150.4	171.4	171.9	189.6	264.0	303.2	351.2	409.8
Development Expenditure	37.2	29.8	29.6	41.8	102.4	113.1	216.4	184.6
Public Entities Position	43.5	-16.0	0.5	-19.2	-43.9	12.3	-3.0	-4.0
Other Public Operations	-	18.9	-1.5	-13.1	-40.1	-33.7	12.7	-7.5
Overall Deficit	-29.6	-39.6	-26.2	-72.2	-162.6	-130.3	-169.5	-139.3
Net Domestic Assets	152.2	180.4	206.1	301.3	399.7	262.5	721.7	887.1

Source: Bank of Sudan Annual Report, various issues

Table VI.4: Sudan: Growth in GDP, Consumer Prices and Money Supply

	GDP		Money Supply	Column 3 minus Column 2	Consumer Prices
	Current Price	Constant Prices			
	1	2	3	4	5
1970	19.3	5.7	14.4	8.7	3.9
1971	8.5	8.1	5.1	-3.0	4.0
1972	9.4	4.1	19.5	9.4	13.5
1973	7.7	7.0	22.0	15.0	15.3
1974	38.9	10.1	30.4	20.3	26.1
1975	21.1	-4.3	14.4	18.7	23.6
1976	22.3	5.7	21.8	16.1	2.1
1977	26.6	10.1	38.2	28.1	16.7

Source: Computations based on data obtained from IMF Financial Statistics, and Bank of Sudan Annual Reports

in the money supply were also associated with higher rates of inflation. According to this one might be tempted to conclude that, excessive monetary expansion was the major source of domestic inflation. Such a conclusion is premature. The periods with large excess increases in the money supply were also the ones in which import prices had their largest influence on domestic prices; the wage bill increased dramatically; and the government sector recorded huge deficit.

That is, the excess increases in the money supply might have been the result of domestic inflation initiated by external factors rather than the cause. To explain, an increase in domestic prices as a result of a rise in import prices might cause government expenditure to increase by more than revenue.

This occurs not only because governments find it difficult to reduce their commitments in real terms, but also because of the low nominal income elasticity of tax, and the long time lag in tax collection. In the absence of adequate capital markets, and sufficient foreign loans, the resultant government deficit must be financed by borrowing from the banking system leading to an expansion in net domestic assets. To the extent government deficit financing is not associated with increases in real output, this will lead (assuming a stable demand for money) to higher domestic prices, wider government deficits and so on [†].

The contribution of strutural rigidities and imbalance to the propagation of domestic inflation must not be overlooked. As noted before, over the period 1970-1977, development investments were concentrated on the transportation and communication sector which is not a directly

---

[†] This type of self-generating inflation has been studied by many IMF writers. However they fail to mention the link between imported inflation and government expenditure. Their analysis views excessive money supply as providing the initial impulse. See for example Aghevli, B. B. and Khan, M. S. (1978) "Government Deficits and Inflationary Process in Developing Countries", IMF Staff Papers, September.

productive sector (at least in the short-run) while the already existing agricultural and industrial projects were neglected. The result was that, the nominal incomes generated by these investments were not matched by increased material production leading to excess demand pressures on goods and services.

It might be concluded that during the period 1970/77 import inflation played the major part not only in initiating domestic inflation but also in leading to increased reliance on deficit financing, and hence the expansion in domestic assets. The structural rigidities and imbalance also played their part. A typical monetarist IMF argument in this respect, is that the effect of import prices could have been offset had the government slowed down its development expenditure and adopted restrictive monetary and fiscal policies. However fighting inflation has no attraction to a developing country like the Sudan, if viewed as an alternative to economic growth.

Furthermore, inflation in the Sudan, during a period when soaring prices were a world-wide phenomenon should not be an alarming problem on its own. The question at stake is the extent to which domestic inflation was responsible for the country's foreign exchange crisis. This leads us to the IMF claim of an overvalued Sudanese currency.

The Claim of an Overvalued Exchange Rate and the Balance of Payments

Under fixed exchange rates inflation in the home country which exceeds the rate of inflation of its trading partners is said to render the country's currency overvalued. An overvalued currency is directly related to the balance of payments disequilibrium since it is said to

encourage excessive imports and discourage exports. Currency devaluation is then justified by the purchasing power parity theory (PPP), and is brought about to restore the external price structure in line with the domestic price structure.

Traditionally the relative price index (RPI) is used as a measure for the average overvaluation or undervaluation of the country's currency†. The relative price index is defined as the ratio of domestic prices (P_D) to foreign prices (P_f) , multiplied by the exchange rate. Starting from initial equilibrium the currency is deemed undervalued or overvalued, as the relative price index diverges from unity. That is:

$$RPI = \left(\frac{P_D}{P_f} R\right) - 1 \qquad (6.1)$$

where R is the exchange rate (the domestic price of foreign currency). Under fixed exchange rate systems, R is fixed so that variations in the RPI are due to changes in prices. If, for example, the RPI measured in this way shows a 25% overvaluation then a 25% devaluation of the exchange rate would restore the exchange rate to its equilibrium position.

A practical problem in using the RPI, is the choice of price indices that can best represent domestic and foreign prices. This choice will vary according to the balance of payment theory, or the structural model supporting the PPP theory. If domestic and foreign prices are

---

† For a review of the PPP, see Officer, H. L. (1976) "The Purchasing Power Parity Theory of Exchange Rates: A Review Article", IMF Staff Papers, Vol.23, March.

represented by the country's export and import prices, respectively, then given the rate of exchange, the RPI would be equivalent to the barter terms of trade index. In this case the question of whether the country's currency is overvalued or undervalued would be reduced to whether the terms of trade are moving in the country's favour or not. This condition is consistent with the elasticity approach to the balance of payments which establishes a relationship between the RPI and the payments balance through import and export prices.

In a monetary model consistent with our interpretation of the IMF policies, an excess supply of financial assets would not affect traded goods prices, and thus the RPI would be identified as the ratio of the price of non-traded to traded goods. In the monetary approach, assuming a "large" country, an excess supply of assets would affect the rest of the world, and in this case the relevant RPI measure would become the ratio of the domestic to the general price level.

Empirically, as prices of traded and non-traded goods are not available, the discussion turns to the measurement of the RPI using the available price indices. Accordingly, three different measures to evaluate the Sudanese currency are suggested: The ratio of[†]:

(a) export to import prices (P_x/P_m);

(b) domestic consumer to foreign consumer prices (P_D/P_{Df}); and

(c) domestic wholesale to foreign wholesale prices (P_w/P_{wf}).

[†] A useful measure in this respect is the normalized unit labour cost, which is often used by the IMF as a measure of competitiveness. Unfortunately Sudanese data for such a measure are not available.

The first task in estimating the different RPI measures is to compute the foreign price indices. To do this, a weighted average of prices of 26 countries that trade with the Sudan are used. The price indices of the individual countries were transformed into dollar units and summed using trade weights. By the end of 1969:IV The Sudan's trade balance stood at a small surplus of Lsd 2.6 million. This period was chosen to be the base period (i.e., a period of equilibrium between the Sudan and its trading partners). The foreign price indices calculated above, together with domestic prices and the exchange rate are substituted in equation (6.1) to obtain the 3 measures of the RPI, using the period 1969:IV as the base year. The estimation time period covers the years up to 1976:IV, prior to the 1978 IMF-imposed devaluation. The RPI measures obtained in this way are plotted in Figure VI.1, VI.2 and VI.3 (the figures on which these graphs are based are shown in Appendix A).

The RPI based on the export-import price ratio shows a moderate improvement in the terms of trade (i.e.; some 10% average overvaluation of the Sudanese currency) over the period 1970:I to 1971:IV. In the first quarter of 1972 the RPI recorded about 55% overvaluation. This sudden jump is explained by the December 1971 devaluation of the American dollar (to which the Sudanese currency was tied), and the time which lapsed till the Sudanese authorities decided to bring their currency in line with that of the US in March 1972. This devaluation of the Sudanese pound, together with the effects of currency re-alignments of

Figure VI.1: Relative Price Index (Export-Import)

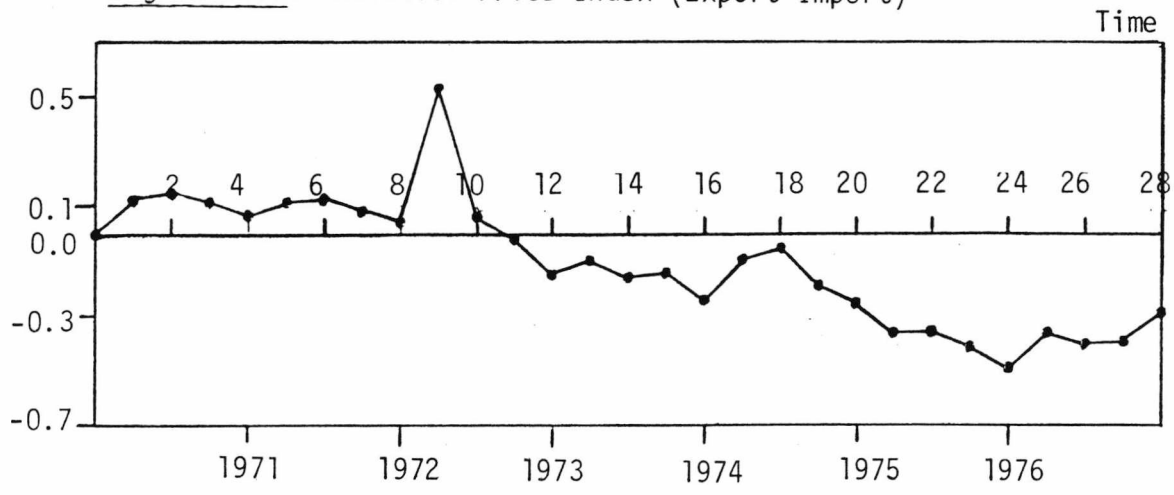


Figure VI.2: Relative Price Index (Consumer)

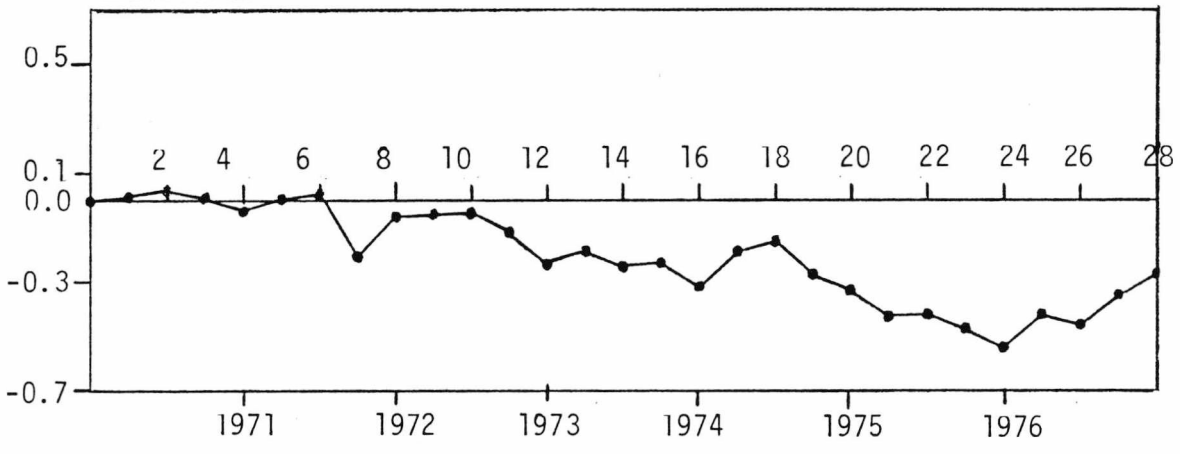
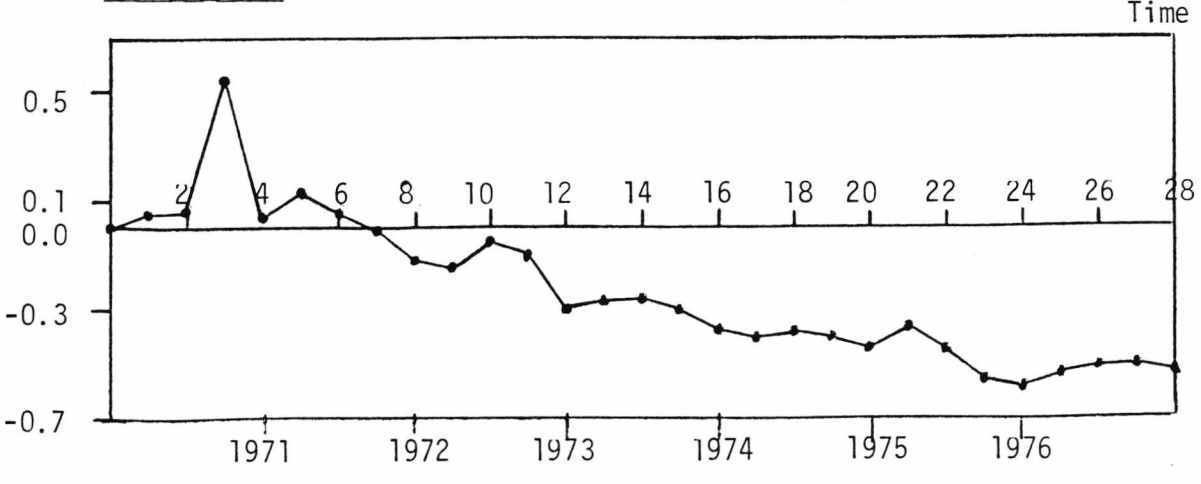


Figure VI.3: Relative Price Index (Wholesale)



February 1973, explain the subsequent deterioration in the terms of trade between 1972:I and 1973:IV. The oil inflation initiated in 1973 then caused the terms of trade to decline sharply again after mid-1974.

The RPI measure using consumer and wholesale prices exhibited a slightly different pattern over the period 1970:I and 1972:I, but an almost similar pattern in following years. However according to these 3 measures, the Sudanese currency was well below the zero marker (i.e., undervalued), in at least the 4 years before the 1978 balance of payment crisis.

This finding appears to conflict with the commonly held view that a country with an overvalued (undervalued) currency would tend to find itself in a deficit (surplus). In practice no a priori relationship can be specified between the RPI and the balance of payments. To illustrate, consider the case where the RPI is measured as the ratio of export to import prices. In this case, assuming a fixed exchange rate, an overvalued currency would result if import prices continued to rise faster than export prices, implying a deterioration in the terms of trade. According to the Purchasing Power Parity Theory, this would cause allocational shifts in both production and consumption. Import demand would be restrained by the higher import prices, diverting demand to home-produced goods and hence stimulating the supply of import substitutes. A greater supply of exports would also be stimulated as the demand for exports increases. This process should eventually result in a balance of payments surplus.

In the case of a developing country like the Sudan, the assumptions underlying this process may not be satisfied. That is, if the demand for

Table VI.5: Sudan: Price and Volume Indices of Exports and Imports

	Export		Import	
	Unit Values	Volume	Unit Values	Volume
1970	100.0	100.0	100.0	100.0
1971	108.2	101.7	11.5	105.7
1972	118.0	112.7	114.6	94.9
1973	127.5	111.8	140.6	109.8
1974	223.0	67.9	228.2	100.4
1975	197.4	78.1	280.9	115.8
1976	175.4	103.3	280.0	124.9
1977	221.4	77.8	313.5	117.1
1978	194.8	73.8	453.0	108.9
1979	233.7	70.1	493.6	70.1
1980	350.1	68.4	579.9	68.4

Source: Sudan Foreign Trade Indices, Department of Statistics, Ministry of Planning, and Bank of Sudan Annual Reports

Table VI.6: Sudan: Price Factors Affecting the Trade Balance (as a % of trade in the preceding year)

Price Effects	1971	1972	1973	1974	1975	1976	1977
(a) Import Price Effect	-6.8	-1.0	-14.7	-51.0	-23.0	+0.06	-8.4
(b) Export Price Effect	+1.3	+4.9	+11.0	+30.0	-1.9	-4.0	+11.3
(c) Total Price Effect	+5.5	-11.1	-3.3	-20.4	-27.4	-3.4	+2.4
(d) Inflation Effect	-0.06	-0.06	+0.03	-1.4	-12.9	-0.13	-3.3
(e) Terms of Trade Effect	+5.56	-11.04	-3.33	-19.0	-14.5	-0.14	-0.9

NOTES: [a] a negative sign indicates an increase in import prices

[b] a negative sign indicates a fall in export prices

[c] a negative sign indicates a net movement of export and import prices that worsens the trade balance

[d] a negative sign indicates movements in the terms of trade that worsen the trade balance

Source: Calculations based on the method used in The Dell Report. See Dell and Lawrence (1980) *op. cit.*

the country's exports and imports, is price inelastic and the supply of exports is unresponsive to price changes, an overvalued currency caused by a deterioration in the terms of trade will not necessarily lead to a balance of payment surplus. On the contrary it might lead to a deficit. Taking the barter terms of trade as our RPI measure, the evidence suggests that deterioration in the terms of trade had a large negative effect on the country's trade balance. During the period 1970-78 import prices increased by an average of 26.5% (see Table VI.5). At the same time export prices increased by 13.3%, and the terms of trade moved against the Sudan by 13.2%. Since the value of imports normally exceeded that of exports by a wide margin, the negative effect of a given percentage increase in import prices would significantly outweigh the positive effect of the same percentage increase in export prices. To account for this Table VI.6 offers a closer look at the price factors affecting the trade balance and their composition.

This decomposition shows that the import price effect (the change in the import bill attributable to the import price change expressed as a percentage of the value of trade in the preceding year), had the largest adverse effect on the country's trade accounts. The magnitude of these effects ranges from 1% in 1972 to 51% in 1974. During the same period the export price effect (the change in export earning attributable to export prices) recorded positive impacts in 5 years, and negative impacts amounting to 2% and 4% in 1975 and 1976. As the terms of trade deteriorated, the import price effect outweighed the export price effects, resulting in an adverse total price effect throughout the period except for the year 1977.

This decomposition also focuses on the "inflation effect" and the net terms of trade effect on the trade accounts. The "inflation effect" estimates changes in the trade balances that would have happened had export prices increased by the same proportion as import prices. Looking at it in a different way, it measures movements in trade accounts resulting from initial trade imbalances as foreign trade prices rise by the same proportion. The inflation effect is negative throughout the period, yet it only became a sizeable negative impact after the oil inflation.

The difference between the total price effect and the inflation effect gives the net terms of trade effect. This estimates the amount by which the trade balance would have changed had the trade balance initially been zero. The evidence is that, this net terms of trade effect was a major influence behind the deterioration in the trade balance.

However, movements in trade accounts are not only caused by price changes but also by changes in the volume of trade. During the period considered the average annual increase in import volume amounted to 3%. Accordingly the claim that excessive imports were responsible for the country's deficit would only make sense if it is taken to mean imports should have been contained to increase in real terms by less than 3%.

On the side of exports, it is true that sluggish growth in export volume contributed to the country's external deficits. This was mainly caused by declining cotton exports. The exports of other major items showed a moderate increase. This decline in cotton exports cannot be attributed to uncompetitive cotton export prices. In fact the prices of Sudan's cotton, and in particular long-staple cotton, rose rapidly over the period considered partly due to a fall in exports of

cotton from Egypt (Sudan's main competitor in the export of long-staple cotton) and partly because of an overall strengthening of the cotton market. Nor was the decline in the supply of exports, the result of a rise in domestic cotton consumption, for only a small proportion of Sudan's cotton production was being consumed domestically. In 1972 the amount of cotton absorbed by the domestic market was 8% of total cotton production compared with 5% in 1977. In fact the decline in cotton export supply was due to a multiplicity of domestic causes, including administrative, production and institutional problems. These are discussed in subsequent sections.

In summary, the above analysis shows that the claim of an overvalued exchange rate which encourages imports and discourages exports (and hence the Fund devaluation policy) cannot be justified by the PPP theory. However an IMF official who was closely associated with the policy decisions taken in the Sudan over the period 1978-81, has given a different justification for the devaluation of the Sudanese currency. His argument is based on what is called the "Supply Framework for Exchange Rate Determination"†.

The Supply Side Framework

The approach, broadly speaking, is to view or to use the exchange rate not as an instrument for increasing the demand for a country's tradeable goods, but to increase the profitability of supply. The idea

† See K. Nashashibi (1980) *op. cit.*

behind the supply framework for exchange rate determination is to calculate the so-called "competitveness" of each export, by relating its domestic costs to its international value added. Firstly, the international value added (V) is measured as the difference between the value of exports and imported inputs used in production, both measured in domestic currency:

$$V = (P_X X - P_m T) \tag{6.2}$$

where X is output, P_x is the world price of output in domestic currency, T is the quantity of imported inputs, and P_m is the price of imported inputs in domestic currency. Secondly, a coefficient of competitiveness (C) is defined as the ratio of the international value added (converted into foreign currency) to the cost of domestic inputs used in production:

$$C = \frac{Vr}{P_D D} \tag{6.3}$$

where D is the amount of domestic resources used in production (non-traded goods and factors of production), P_D is the price of domestic inputs and r is the exchange rate (the foreign price of domestic currency).

The coefficient C is thus a measure of the foreign exchange obtained (or saved in the case of import substitutes) per unit of domestic resources used in the export sector. Nashashibi also considers the

coefficient as an implicit exchange rate which can be compared with the existing exchange rate. If $C<r$ the product is regarded as not profitable at the existing exchange rate, and vice versa. In this way, export and import substitute activities can be arranged on a profitability scale, and according to the supply side argument, the appropriate devaluation is the one that goes down the scale of profitability to ensure the competitiveness of traditional exports, as well as (perhaps) to encourage marginal export activities, and import substitutes. It can be seen from equation (6.3) that $C<r$ implies $V/P_D D<1$, and devaluation to increase competitiveness must raise V by more than in proportion to $P_D D$.

Tables VI.7 and VI.8 show the coefficients of competitiveness of some Sudanese exports and import substitutes, estimated by Nashashibi for two different time periods, namely 1972/73, and 1976/77. These time periods were chosen because they preceded the devaluations of the Sudanese pound of 1972 and 1978. For the 1972/73 it was found that long-staple cotton and sugar were the most profitable activities since their competitiveness coefficient exceeded the rate of the exchange at which their export proceeds were converted. While medium-staple cotton, groundnuts, wheat and sorghum were found to be uncompetitive, Based on this result the 1972 devaluation was said to be justified so as to ensure the profitability of those "marginal" activities.

Competitiveness in 1976/77 was evaluated for ten crops in irrigated and rainfed areas. It was found that only groundnuts and sesame were competitive, while all other crops including cotton and sugar were not

Table VI.7: Sudan: Competitiveness of Selected Exports and Imports Substitutes 1972/73 (Irrigated Crops)

	Cotton Long-Staple	Cotton Medium-Staple	Groundnuts	Wheat	Sorghum	Sugar
(1) Value of Output	93.0	80.3	44.8	21.1	18.0	356.7
(2) Cost of Imported Inputs	22.4	24.1	13.0	13.3	8.6	79.9
(3) Cost of Domestic Inputs	54.2	51.0	41.3	18.5	16.9	175.3
(4) International Value Added						
(a) in domestic currency	70.6	56.2	31.8	7.8	9.4	276.8
(b) in US dollars	176.5	140.5	79.5	19.5	23.5	692.0
(5) Competitiveness Coefficient	3.25	2.75	1.92	1.05	1.39	3.95
(6) Exchange Rate	2.87	2.87	2.5	2.5	2.5	2.5

Notes: (1), (2), (3) and (a) are calculated per feddan in Sudanese pound.

(b) converted at the exchange rate 1 Lsd = US $ 2.50

(6) Exchange rate at which the export transactions are conducted. For sugar, it is the exchange rate at which sugar is imported.

Source: Adapted from Nashashibi (1980) *op. cit.*

profitable with a coefficient of competitiveness below the exchange rate at which their export proceeds were converted (Table VI.8). According to these results between 1972/73, and 1976/77 the competitiveness of Sudanese exports and imports substitute activities deteriorated from a weighted average of US $ 2.68(per unit of domestic resources used)to US $ 2.44. The causes of this erosion in competitiveness were also analysed by Nashashibi.

The deterioration in the competitiveness of long-staple cotton was attributed to a decline in yield and increasesin costs of labour and non-traded goods, while the deterioration in sugar was said to be the result of lower productivity and increases in production costs which exceeded the rise in its world price.

Based on such results it was argued that the 1978 devaluation policy was justified so as to improve the country's traditional exports. And it was suggested that the appropriate exchange rate adjustment must be at the margin of competitiveness of medium-staple cotton and rainfed sorghum i.e., around 1 Lsd=US $ 2.00. Such a devaluation was said to be not only an indispensible condition for the expansion of exports, but also provides all other production activities with a greater stimulus for output expansion.

The devaluation of the exchange rate was said to have desirable income distributional effects among producers since it favours those who use less import-intensive techniques. Moreover, since the consumption basket of the low income groups has a high proportion of non-traded goods, while that of higher income groups is more-intensive, the burden of adjustment would be relatively larger on higher income groups.

Table VI.8: Sudan: Competitiveness of Selected Exports and Import Substitutes: 1976/77

	Irrigated Crops						Rainfed Crops		
	Cotton								
	Long-Staple	Medium-Staple	Groundnuts	Wheat	Sorghum	Sugar	Groundnuts	Sesame	Sorghum
1. Value of output	150.2	126.9	87.8	40.3	27.3	413.6	47.2	31.8	16.7
2. Cost of imported inputs	35.1	41.7	23.3	26.9	11.5	135.8	12.5	10.9	10.7
3. Cost of domestic inputs	107.0	96.1	33.5	30.5	29.6	270.4	26.9	19.5	7.2
4. International value added									
a. in domestic currency	115.1	85.2	64.5	13.4	15.8	277.7	34.7	20.9	6.0
b. in US dollars	287.7	213.0	161.2	33.5	39.6	694.2	86.7	52.2	15.0
5. Competitiveness coefficient	(2.69)	(2.22)	(2.46)	(1.10)	(1.34)	(2.57)	(3.22)	(2.68)	(2.08)
6. Exchange rate	2.87	2.87	2.5	2.5	2.5	2.5	2.5	2.5	2.5

Notes: (1), (2), (3) and (a) calculated per feddan in Sudanese pounds.
(b) converted at the exchange rate 1Lsd=US$ 2.50
(6) exchange rate at which the export proceeds from each crop are converted. For sugar the exchange rate at which it is imported.

Source: Adapted from Nashashibi (1980) *op. cit.*

The above is a brief account of the supply framework presented by Nashashibi (1980). The essence of the argument is similar (if not identical) to that of the IMF note which endorsed the devaluation of the Sudanese pound. In some cases the same text was used. This is particularly true in the discussion of the income distributional effects of devaluation. It is apparent that the IMF package of proposals was based on the policy conclusion of Nashashibi's work. However, as a method of exchange rate determination and export promotion this new "supply framework" is questionable.

The Supply Framework: A Critique

To start with the method implicitly assumes that costs and prices are constant over time. A sudden change in the terms of trade or a large drop in the price of one export relative to that of others, will result in a profound change in the structure of competitiveness. Accordingly, the coefficients of competitiveness on the assumption of constant prices cannot confidentally be used as a criterion for a long-run export allocation strategy. The behaviour of the sugar industry during the period 1972-1977 illustrates the point. In 1972 The Sudan allocated huge amounts of resources for sugar production to promote the country as a major sugar exporter. Nashashibi's results supported this, for sugar production was found to be the most profitable activity. (See Table VI.7). In a matter of four years, and before the newly launched sugar factories became operative, the competitiveness of sugar deteriorated from US $ 3.96 to US $ 2.35. This according to the supply framework, implies that in the absence of exchange rate adjustment, sugar production should not be expanded and resources should be shifted to more

profitable activities.

On the other hand, a devaluation which brings down the exchange rate to a level that matches the coefficient of competitiveness of sugar, is said to be an indispensible condition for the restoration of profitability. However, this is not necessarily the case, since the coefficient of competitiveness can be increased to match the prevailing exchange rate, by increasing productivity relative to domestic costs. Competitiveness in 1976/77 was evaluated on the assumption that, productivity remained at its 1972/73 level, while retaining all other changes in costs, and prices. The results of these calculations which are shown in Table VI.9 reveal that long-staple cotton, medium-staple cotton and sugar would have remained highly profitable had their level of productivity been maintained. It must be noted that the deterioration in productivity in these 3 activities was partly due to shortages of imported inputs and manpower as well as deterioration in the water delivery system, and partly due to growing disputes between farmers and government impairing work efficiency. (See Table VI.9 overleaf.)

The extent to which these problems were affecting production and productivity in the agricultural sector can be seen by examining Table VI.10. The table shows the average yield of cotton, groundnuts, wheat and dura in the Gezira scheme over the period 1967/63-1976/77. These if compared with the average yield under experimental conditions in the Gezira observation stations (Column B) reveals the large potential for yield improvement in agriculture. In the case of cotton, for example, average yield under farm condition is half of that achieved in the observation stations, while in the case of groundnuts it is 43%.

Table VI.9: Sudan: Competitiveness Coefficients in 1976/77 Evaluated at the 1972/73 Productivity level

	Cotton		Sugar
	Long-Staple	Medium-Staple	
Value of Output	180.1	173.9	551.5
Cost of Imported Inputs	35.1	41.7	135.8
Cost of Domestic Inputs	107.0	96.1	270.4
International Value Added			
(a) in domestic currency	145.0	132.2	415.7
(b) in foreign currency	362.5	330.5	1039.3
Coefficient of Competitiveness	3.39	3.44	3.84

Source: Calculated from Table VI.8 using 1972/73 productivity levels reported in Table VI.7 (retaining all other price and cost levels).

In short, there is a scope for increasing the profitability of the various agricultural activities by improving domestic yields without resort to devaluation.

Table VI.10: Sudan: Potential For Yield Improvement, 1967/68-1976/77 (kilograms per feddan)

Crop	A Average Yield Under Farm Condition	B Average Yield In Observation Station	C A as a % of B
Cotton	549	1100	50
Wheat	440	1241	36
Groundnuts	602	1401	43
Sorghum (dura)	491	1502	33

Source: Calculations from data supplied by the Gezira Board, Barakat.

Furthermore, the supply side framework devaluation policy, which promotes the expansion of traditional crops can be dangerous because it ignores the demand side. Of particular importance here are the different income elasticities of demand for exports and imports. A country like The Sudan which relies on the export of a few highly unattractive primary products, and imports a large proportion of goods needed for domestic consumption, will soon find itself in serious balance of payments difficulties, if it attempts to acclerate its growth rate using primary products as a spring board. The Sudan with its relatively high income elasticity of demand for imports can grow faster only by shifting investments to the production of more attractive goods for both the foreign and domestic market†.

The devaluation policy(which is based on coefficients of competitiveness estimated for the existing traditional export crops),advocates the continuous reliance on a handful of primary products, which is the production pattern giving rise to the balance of payments weakness in the first place. Moreover, devaluation cannot be guaranteed to improve the "coefficient of competitiveness" (C), or the coefficient of competitiveness relative to the exchange rate (C/r). The index itself depends on the exchange rate (r), so that if devaluation is to improve the profitability of exports (C/r) the coefficients of competitiveness (C) must not deteriorate by more than the fall in the foreign price of

† For the Balance of Payments Equilibrium Growth Rate Doctrine, see Thirlwall, A. P. (1979) "The Balance of Payments Constraint as an Explanation of International Growth Rate Differences", Banca Nazionale de Lavoro Quarterly Review, March. For the application of this doctrine to The Sudan and other developing countries, see Thirlwall, A. P. and Hussain, M. N. (1982) "The Balance of Payments Constraint, Capital Inflows and Growth Rate Differences Between Developing Countries", Oxford Economic Papers, Vol.34, No.3, November.

domestic currency (r). This cannot be taken for granted. It depends on the response of P_x , X , P_m , T , P_D and D , to the change in r . Secondly, reducing r to make some goods more competitive may reduce $Vr/P_D D$ for other goods which are already profitable at the existing exchange rate, and reduce overall foreign exchange earnings per unit of domestic input. At the very least a discriminatory approach may be required which recognises differences in other variables determining C .

Finally, improvements in the competitiveness or the profitability of some export items, do not necessarily imply improvements in the country's overall position as measured by its balance of payments (which ought to be the main IMF concern). This depends on the effect of devaluation on the country's total exports as well as total imports.

The following sections investigate the possible effects of devaluation on the export sector and the balance of payments from the supply-sided perspective. The section address two main issues:

(a) the conditions under which the coefficient of competitiveness (C), and the profitability index (C/r), would improve following devaluation; and

(b) the effect of devaluation on the balance of payments viewed from the supply side.

Devaluation, Competitiveness, and Profitability: The Value-Added Model

The question of whether competitiveness improves or not depends on whether the change in C is positive or negative as the exchange rate is devalued. But improvements (deteriorations) in competitiveness do not automatically imply improvements (deteriorations) in profitability. This depends on whether the post-devaluation coefficient of competitiveness is larger than the post-devaluation exchange rate (i.e., whether the change in the profitability index (C/r) is positive or negative, following devaluation. It is convenient to examine these questions working with readily understood elasticities. From the equation of competitiveness :

$$C = \frac{(P_X X - P_m T)r}{P_D D} \tag{6.4}$$

From equation (6.4) the index of profitability is:

$$C/r = \frac{(P_X X - P_m T)}{P_D D} \tag{6.5}$$

Taking small rates of change of the variables (denoted by a dot), we have:

$$\dot{C} - \dot{r} = w_1(\dot{P}_X + \dot{X}) - w_2(\dot{P}_m + \dot{T}) - (\dot{P}_D + \dot{D}) \tag{6.6}$$

where w_1 and w_2 are the weights: w_1 being the ratio of export value to value added, measured in domestic currency, and w_2 the ratio of imported inputs to value added.

Dividing by $\dot{r}$ (the proportionate change in the exchange rate) gives:

$$\dot{C}/\dot{r} = w_1 \frac{\dot{P}_X}{\dot{r}} + w_1 \frac{\dot{X}}{\dot{r}} - w_2 \frac{\dot{P}_m}{\dot{r}} - w_2 \frac{\dot{T}}{\dot{r}} + \frac{\dot{r}}{\dot{r}} - \frac{\dot{P}_D}{\dot{r}} - \frac{\dot{D}}{\dot{r}} \qquad (6.7)^{\dagger}$$

where

$\dot{P}_X/\dot{r}$ is the elasticity of export prices in domestic currency (>0)

$\dot{X}/\dot{r}$ is the elasticity of export volume (>0)

$\dot{P}_m/\dot{r}$ is the elasticity of import prices in domestic currency (>0)

$\dot{T}/\dot{r}$ is the elasticity of demand for imported inputs (<0)

$\dot{P}_D/\dot{r}$ is the elasticity of domestic prices (>0)

$\dot{D}/\dot{r}$ is the elasticity of domestic resources used (>0)

Presumably $\dot{T}/\dot{r}$ and $\dot{D}/\dot{r}$ may be assumed to be approximately equal to each other and cancel out in their effect on $\dot{C}$. Less imported inputs which are now more expensive will be substituted by domestic inputs to an equal extent (or perhaps more if they are less productive). The effect of w_2 attached to $\dot{T}/\dot{r}$, will be small if the elasticity of imported and value added are roughly equal so that w_2 is close to unity. If these two elasticities are ignored, whether competitiveness

---

† If devaluation has a positive effect on a variable, the elasticity is treated as positive, which in effect means that $\dot{r}$ in the denominator is treated as positive. The implication for $\dot{r}/\dot{r}$ is that it enters the equation as -1. (Equation 6.7)

improves or not reduces to a consideration of the response of export prices, export supply, import prices, and domestic inputs prices, and whether the joint effect of these elasticities is enough to compensate for the reduction in the foreign price of domestic currency. In other words, from equation (6.7), $\dot{C}>0$ if:

$$w_1 K_x(1+S_x) - w_2 e_{P_m} - e_{P_D} - 1 > 0 \qquad (6.8)$$

where

K_x measures the degree of pass-through of devaluation into higher export prices in domestic currency $(\dot{P}_x/\dot{r})$

S_x is the elasticity of supply of export $(\dot{X}/\dot{p}_x)$

e_{P_D} is the elasticity of domestic input prices $(\dot{P}_D/\dot{r})$

e_{P_m} is the elasticity of import prices $(\dot{P}_m/\dot{r})$

and

-1 is the loss of foreign exchange from a 1% devaluation.

From equation (6.8) taking $\dot{r}/\dot{r}$ to the left-hand-side, and using our elasticity definitions, it can easily be seen that profitability will improve i.e., $(\dot{C}-\dot{r})>0$ if:

$$w_1 K_x(1+S_x) - w_2 e_{P_m} - e_{P_D} > 0 \qquad (6.9)$$

Devaluation and the Balance of Payments: A Supply Side Model

The IMF's supply side framework analysed in the previous section views improvement in competitiveness as an increase in the foreign exchange

earned or saved per unit of domestic resources used in the export sector. This is different from the conventional meaning of improved competitiveness which is measured by the devaluation-induced fall in the foreign exchange price of the devaluing country's exports relative to its competitors. In the context of the IMF supply-sided devaluation policy such a reduction in the foreign exchange price of exports is not necessary to increase the demand for exports. The country is assumed to be a price taker in the world market. It is the response of the ratio of export prices in domestic currency to domestic input prices that is crucial for the success of the IMF supply-side approach. Improvement in this ratio is expected to stimulate the supply of exports. In addition to increasing export volume, devaluation is also said to reduce the demand for imports through its expenditure-reducing and expenditure-switching effects. To analyse the effects of devaluation on export supply and import demand, the balance of payments in domestic currency can be expressed as:

$$B = \frac{P_x x}{RP_f m} \tag{6.10}$$

where x is the volume of total exports; m is the volume of total imports, P_f is import prices in foreign currency, R is the exchange rate (defined as the domestic price of foreign currency), and P_x is defined as before. Taking small rates of change of the variables (denoted by a dot) we have

$$\dot{B} = \dot{P}_x + \dot{x} - [\dot{R}+\dot{P}_f+\dot{m}] \tag{6.11}$$

The quantity of exports supplied can be specified as a function of the ratio of export prices to domestic prices on the assumption that the higher this ratio the greater the incentive for export production

$$x = (P_X/P_D)^{S_X} \tag{6.12}$$

where S_X is the supply price elasticity of exports. The rate of change in export supply may be written as:

$$\dot{x} = S_X(\dot{P}_X - \dot{P}_D) \tag{6.13}$$

The demand for imports may be viewed as a multiplicative function of import prices, domestic prices of import substitutes and domestic income:

$$m = (RP_f/P_d)^{\psi} \; Y^{\pi} \tag{6.14}$$

where ψ is the price elasticity of demand for imports ($\psi<0$), Y is domestic real income, and π is the income elasticity of demand for imports ($\pi>0$). The rate of change in imports is:

$$\dot{m} = \psi(\dot{P}_f + \dot{R} - \dot{P}_d) + \pi\dot{Y} \tag{6.15}$$

Substituting equations (6.13) and (6.15) in equation (6.11) we have:

$$\dot{B} = \dot{P}_X + S_X(\dot{P}_X - \dot{P}_D) - [\dot{R} + \dot{P}_f + \psi(\dot{P}_f + \dot{R} - \dot{P}_d) + \pi\dot{Y}] \tag{6.16}$$

Dividing through by $\dot{R}$ (the proportionate change in the exchange rate) and defining the following as elasticities with respect to a change in the exchange rate:

$K_x = \dot{P}_x/\dot{R}$ = the pass-through of devaluation into higher export prices in domestic currency (>0)

$K_m = \dot{P}_f/\dot{R}$ = the elasticity of foreign import prices (<0)

$e_{P_D} = \dot{P}_D/\dot{R}$ = the elasticity of domestic input prices (>0)

$f_D = \dot{P}_d/\dot{R}$ = the elasticity of domestic prices of import substitutes (>0)

$y = \dot{Y}/\dot{R}$ = the elasticity of real domestic income.

We obtain:

$$\dot{B}/\dot{R} = K_x + S_x K_x - S_x e_{P_D} - \frac{\dot{R}}{\dot{R}} + K_m + \psi - \psi K_m - \psi f_D - \pi y \qquad (6.17)$$

Assuming that foreigners will not reduce the supply price of their exports as a result of devaluation (i.e., K_m=zero) and rearranging we have:

$$\dot{B}/\dot{R} = (K_x-1) + S_x(K_x-e_{P_D}) + \psi(1-f_D) - \pi Y \qquad (6.18)$$

Accordingly, the balance of payments will improve as a result of devaluation, if the expression on the right-hand-side is positive. This expression captures 4 major effects of devaluation:

(a) The terms of trade effect of devaluation on the balance of payments which is measured by (K_x-1). If export prices in domestic currency increase by less than the proportionate devaluation (i.e., $K_x<1$) the terms of trade will deteriorate adversely affecting the balance of payments;

(b) This adverse effect might be offset by the export supply effect of devaluation which depends on the price incentive that devaluation might offer to exporters $(K_x-e_{P_D})$ and the degree of responsiveness of export volume to such a price advantage (S_x). If for example K_x is less than e_{P_D} devaluation will work as a disincentive for the expansion of exports, rather than an incentive;

(c) The effect of devaluation on the balance of payments through its expenditure-switching effects from foreign goods to home goods is capured by $\psi(1-f_D)$. If devaluation causes domestic prices of import substitutes to rise by less than in proportion, there will be an incentive to shift consumption from foreign goods to home goods. If $f_D>1$ consumption will shift to foreign goods adversely affecting the balance of payments; and

(d) Finally, there is the income effect on the balance of payments $(-\pi y)$. If devaluation reduces real income in the devaluing country (i.e., y is negative) the balance of payments will improve, while it will deteriorate if devaluation increases real income. The strength of the income effect, in both cases, depends on the income elasticity of demand for imports, and the magitude of change in real income as a result of devaluation.

The Specifications of Export and Import Functions

As was shown in the previous sections, the success of devaluation in improving the profitability of the export sector and the balance of payments depends (among other parameters) on the supply price elasticity of exports (S_x), the demand price elasticity of imports (ψ), and the income elasticity of demand for imports (π). The purpose of this section is to measure the different elasticities of Sudanese exports and imports. Here extensive use will be made of the method pioneered by Goldstein and Khan (1978). Two models are estimated: an equilibrium model and a disequilibrium model. The equilibrium model assumes that the adjustment of prices and quantities is instantaneous, while the disequilibirum model relaxes this assumption allowing the adjustment of actual to equilibrium values to take place with some delay. The functional forms stem from the traditional specification of export and import demand functions. Traditionally the demand for exports is specified as:

$$\log x_t^d = e_0 + e_1 \log (P_x/P_{xw})_t + e_2 \log Y_{wt} \qquad (6.19)$$

where x^d is the quantity of exports demanded, Y_{wt} is a weighted average of the real incomes of the country's trading partners, e_1 is the price elasticity of demand for exports and e_2 is the foreign income elasticity of exports. The import demand function is specified as:

---

† Goldstein, M. and Khan, M. S. (1978) "The Supply and Demand for Exports: A Simultaneous Approach", Review of Economics and Statistics, May.

$$\log m_t^d = b_0 + b_1 \log (P_m/P_d)_t + b_2 \log Y_t \qquad (6.20)$$

where, m^d is the quantity of imports demanded, b_1 and b_2 are the price and the income elasticities of demand for imports respectively. and all other variables defined as before.

These traditional specifications of the demand functions of exports and imports are based on two assumptions. First, it is assumed that importers are always on their demand functions. Secondly, it is assumed that the supply price elasticities are infinite or extremely large. If either of these assumptions is not satisfied estimates of the parameters of equations (6.19) and (6.20) would be biased and inconsistent.

The relaxation of the first assumption required the introduction of an adjustment scheme which relates the change in exports (imports) to the difference between the demand in period t to the actual exports (imports) in period t-1. The second assumption (the assumption of infinite supply elasticities) although it is acceptable a priori in the case of the world supply of imports to a single country, carries far less intuitive appeal when applied to the supply of exports of an individual country†. The relaxation of this assumption requires the elimination of any bias arising from the probable two-way relationship between export quantities and export prices. This can be done by specifying a supply relationship for exports, and consistent estimates of the relevant elasticities can be obtained by estimating the supply and demand functions for exports simultaneously.

---

† Goldstein and Khan (1978) *op. cit.*, p.275.

Starting with export functions, the supply of exports can be specified as:

$$\log x_t^s = a_0 + a_1 \log (P_x/P_D)_t + a_3 \log TR_t \qquad (6.21)$$

where x is the quantity of exports supplied, a_1 is the supply price elasticity, TR is a trend term and all other variables are defined as before. The trend term is introduced to capture, as far as possible, shifts in the supply curve. Following Goldstein and Khan, equation (6.21) can be normalized for the price of exports to yield:

$$\log P_{x_t} = b_0 + b_1 \log X_t^s + b_2 \log TR_t + b_3 \log P_{D_t} \qquad (6.22)$$

where

$$b_0 = \frac{-a_0}{a_1} \quad , \quad b_1 = \frac{1}{a_1} \quad , \quad b_2 = \frac{-a_2}{a_1} \quad \text{and} \quad b_3 = -1 \; .$$

since $a_1>0$ and $a_2>0$ then $b_1>0$ and $b_2<0$. The price elasticity of supply of exports (a_1) can be obtained indirectly from equation (6.22) by calculating $1/\hat{b}_1$. The equilibrium model for exports is made up of equations (6.19) and (6.22).

The disequilibrium model for exports assumes that exports adjust to the difference between the demand for exports in period t and the actual flow in the previous period:

$$\Delta \log X_t = \nu(\log X_t^d - \log X_{t-1}) \qquad (6.23)$$

where ν is the adjustment coefficient and Δ is the first difference operator. Substituting (6.23) into (6.19) yields:

$$\log X_t^d = C_0 + C_1 \log (P_x/P_{xw})_t + C_2 \log Y_{w_t} + C_3 \log X_{t-1} \qquad (6.24)$$

where

$$C_0 = \nu e_0 \quad , \quad C_1 = \nu e_1 \quad , \quad C_2 = \nu e_2 \quad \text{and} \quad C_3 = 1-\nu \ .$$

The price of exports is assumed to respond to differences in the demand for andsupply of exports. So that:

$$\Delta \log P_{X_t} = \lambda(\log X_t - \log X_t^s) \qquad (6.25)$$

where λ is the coefficient of adjustment, substituting (6.25) into (6.22) and solving for $\log P_{X_t}$ yields:

$$\log P_{X_t} = \log d_0 + d_1 \log X_t + d_2 \log P_{dt} + d_3 \log TR_t + d_4 \log P_{X_{t-1}} \qquad (6.26)$$

where :

$$d_0 = \frac{-\lambda a_0}{1+\lambda a_1} \quad , \quad d_1 = \frac{\lambda}{1+\lambda a_1} \quad , \quad d_2 = \frac{\lambda a_1}{1+\lambda a_1} \quad ,$$

$$d_3 = \frac{-\lambda a_2}{1+\lambda a_1} \quad \text{and} \quad d_4 = \frac{1}{1+\lambda a_1}$$

since, $a_1>0$, and $a_2>0$ and $\lambda>0$, we expect $d_1>0$, $d_2>0$, $d_3<0$ and $d_4>0$. Equations (6.26) and (6.24) constitute the disequilibrium model, which can be estimated simultaneously to obtain estimates of the structural parameters. $\frac{1}{d_1/(1-d_4)}$ gives the estimate of the price elasticity of supply of exports from the disequilibrium model.

For the import function, the assumption of an infinite elasticity of import supply is retained, while the assumption that importers are always on their demand curve is relaxed. This necessitates the introduction of an adjustment scheme in the import demand function. The quantity of imports is assumed to adjust to conditions of excess demand, so that

$$\Delta \log m_t = \theta[\log m_t^d - \log m_{t-1}] \qquad (6.27)$$

where θ is the adjustment coefficient. Substituting equation (6.27) into (6.20) gives

$$\log m_t = \psi_0 + \psi_1 \log (P_m/P_D)_t + \psi_2 \log Y + \psi_3 \log m_{t-1} \qquad (6.28)$$

where $\psi_0 = \theta b_0$, $\psi = \theta b_1$, $\psi_2 = \theta b_2$ and $\psi = (1-\theta)$. The expected signs of the parameters are $\psi_1 < 0$, $\psi_2 > 0$, and $\psi_3 > 0$. The short-run price and income elasticities are given by ψ_1 and ψ_2 respectively. While the long-run elasticities can be obtained directly by estimating equation (6.20) or indirectly from equation (6.28) by setting $\log m_t = \log m_{t-1}$ (which is the long-run equilibrium condition), which yields

$$b_1 = \frac{\psi_1}{(1-\psi_3)} \quad , \quad b_2 = \frac{\psi_2}{(1-\psi_3)}$$

Estimation and Results

The equilibrium model of demand and supply of exports, equations (6.19) and (6.22), and their disequilibrium cases, equations (6.26) and (6.24) are estimated for the main Sudanese export items, namely cotton, groundnuts, gum arabic and sesame. The models are also estimated for aggregate exports. The method of estimation used for the export function is the Full-Information Maximum Likelihood (FIML). This method, besides requiring the specification of the complete model, utilizes all restrictions of the system to estimate the structural parameters, by maximising the likelihood function of the model. For the equilibrium export case a linear FIML estimator is used, while for the disequilibrium case, because of non-linear restrictions of the parameters, a non-linear estimator is used.

The import demand function equation (6.28) is estimated for four import categories namely, consumer goods, raw materials, capital goods and total imports. The method used for estimation is the Ordinary Least Squares. Both the export and import demand equations are estimated, using quarterly data for the time period 1961:1-1980:IV. The results are

reported in Tables VI.11 and VI.12 for the export equation while Table VI.13 reports the results of the import demand function. For the export equations Tables VI.11 and VI.12 report the value of the estimated coefficients and their respective standard errors. This ratio can be assumed to follow a "quasi-T" distribution. The coefficient of determination is not reported since its meaning in simultaneous equations is ambiguous[†]. Also a test of autocorrelation, such as the Durbin-Watson statistics, is not reported since the properties of these tests are not clear in simultaneous models.

Examining first the results of the export equilibrium model (Table VI.11), it is evident that the estimated coefficient of export supply ($\hat{b}_1$) is positive and significantly different from zero at the 95% level in all cases, except sesame, implying a positively sloping supply function for exports. The trend variable is positive and significant in 3 cases: cotton, gum and total exports. In the case of groundnuts, it is negative and insigificant. The coefficient on domestic prices takes the expected positive sign in the case of cotton and sesame; in all other cases it carries a negative sign.

The price elasticity in the export demand equation (2) is negative and highly significant in all cases. For all export items it is well below unity indicating a small response to changes in relative prices. The estimated income elasticity has a positive sign in the case of cotton, groundnuts and total exports. The magnitude of the income elasticity of total exports of 0.17 indicates that Sudanese exports are highly inelastic.

[†] Here the R^2 is not bounded (0,1) but ($-\infty$,1) so that small values are not indicative of a bad fit.

Table VI.11: Equilibrium Estimates of Export Supply and Demand Functions

---

Gum Arabic

1. $\log P_{x_t} = 7.86 + 3.16 \log x_t + 0.67 \log TR_t - 0.21 \log P_{D_t}$
   (12.4) (23.6) (6.76) (-1.82)

2. $\log x_t = 4.9 - 0.65 \log (P_x/P_{x_w})_t - 0.14 \log Y_{w_t}$
   (17.7)(-10.4) (-1.74)

Groundnuts

1. $\log P_{x_t} = -0.06 + 2.60 \log x_t - 0.41 \log TR_t - 0.42 \log P_{D_t}$
   (-0.38) (6.63) (-1.64) (-2.00)

2. $\log x_t = 0.67 - 0.38 \log (P_x/P_{x_w})_t + 0.96 \log Y_{w_t}$
   (4.0) (-3.32) (7.71)

Cotton

1. $\log P_{x_t} = 0.08 + 1.98 \log x_t + 0.08 \log TR_t + 0.19 \log P_{D_t}$
   (3.4) (2.25) (60.4) (8.2)

2. $\log x_t = 0.87 - 0.48 \log (P_x/P_{x_w})_t + 0.33 \log Y_{w_t}$
   (6.5) (-3.69) (5.46)

Sesame

1. $\log P_{x_t} = 7.98 - 1.10 \log x_t - 0.22 \log TR_t + 0.62 \log P_{D_t}$
   (11.2) (-53.4) (-2.00) (5.07)

Table VI.11: (Cont'd.)

Sesame (Cont'd.)

2. $\log x_t = 5.39 - 0.72 \log (P_x/P_{x_w})_t - 0.22 \log Y_{w_t}$
(13.3) (-10.4) (-2.60)

Total Exports

1. $\log P_{x_t} = 0.54 + 2.04 \log x_t + 0.04 \log TR_t - 4.4 \log P_{D_t}$
(5.95)(15.52) (8.43) (-0.21)

2. $\log x_t = 4.34 - 0.58 \log (P_x/P_{x_w})_t + 0.17 \log Y_{w_t}$
(14.4) (-9.9) (2.74)

Table VI.12: Disequilibrium Estimates of Export Supply and Demand Functions

---

Gum Arabic

1. $\log P_{x_t} = \underset{(2.01)}{0.11} + \underset{(7.71)}{8.53} \log x_t - \underset{(-16.2)}{1.04} \log TR_t + \underset{(0.56)}{0.01} \log P_{D_t} + \underset{(2.22)}{0.14} \log P_{x_{t-1}}$

2. $\log x = \underset{(1.37)}{0.50} - \underset{(-0.46)}{0.51} \log (P_x/P_{xw})_t - \underset{(-8.8)}{0.38} \log Y_{w_t} - \underset{(-0.32)}{0.13} \log x_{t-1}$

Groundnuts

1. $\log P_{x_t} = \underset{(1.92)}{1.32} + \underset{(5.42)}{7.2} \log x_t - \underset{(-16.4)}{0.86} \log TR_t + \underset{(2.11)}{0.29} \log P_{D_t} + \underset{(2.20)}{0.13} \log P_{x_{t-1}}$

2. $\log x_t = \underset{(11.7)}{5.81} - \underset{(-5.5)}{0.57} \log (P_x/P_{xw})_t + \underset{(2.89)}{0.42} \log Y_{w_t} + \underset{(3.04)}{0.15} x_{t-1}$

Cotton

1. $\log P_{x_t} = \underset{(2.76)}{0.003} + \underset{(16.2)}{6.64} \log x_t + \underset{(47.6)}{0.82} \log TR_t + \underset{(0.15)}{0.08} \log P_{D_t} + \underset{(0.57)}{0.60} \log P_{x_{t-1}}$

Table VI.12: (Cont'd.)

Cotton (Cont'd.)

2. $\log x_t = 0.7 - 0.38 \log (P_x/P_{xw})_t + 0.14 \log Y_{w_t}$
(20.0) (-6.1) (2.14)

$+ 0.006 \log x_{t-1}$
(0.33)

Sesame

1. $\log P_{x_t} = 0.04 - 0.28 \log x_t + 0.61 \log TR_t + 0.42 \log P_{D_t}$
(1.23)(-7.3) (9.57) (7.87)

$+ 0.37 \log P_{x_{t-1}}$
(7.1)

2. $\log x_t = 0.14 - 0.17 \log (P_x/P_{xw})_t + 0.08 \log Y_{w_t}$
(1.12)(-0.38) (2.24)

$+ 1.11 \log x_{t-1}$
(11.4)

Table VI.12: (Cont'd.)

Total Exports

1. $$\log P_{X_t} = \underset{(2.46)(16.2)}{0.10} + \underset{(47.6)}{9.3} \log X_t + \underset{(0.15)}{0.82} \log TR_t + 0.08 \log P_{D_t} + \underset{(8.57)}{0.6} \log P_{X_{t-1}}$$

2. $$\log X_t = \underset{(20.0)}{0.09} - \underset{(-6.7)}{0.42} \log (P_X/P_{XW})_t + \underset{(7.10)}{0.38} \log Y_{W_t} + \underset{(6.52)}{0.18} \log X_{t-1}$$

Table VI.13: Estimates of Import Demand Function

	R^2	DW
Consumer Goods[a]	0.86	2.21
$\log m^d_t = 4.28 - 0.09 \log (P_m/P_D)_t + 0.69 \log Y_t + 0.14 \log m_{t-1}$		
(0.16)(-3.22) (1.06) (3.81)		
Raw Materials[b]	0.93	1.94
$\log m^d_t = -14.9 - 0.28 \log (P_m/P_D)_t + 1.3 \log Y_t + 0.23 \log m_{t-1}$		
(2.00)(-3.14) (2.60) (1.03)		
Capital Goods[c]	0.73	1.78
$\log m^d_t = -11.8 - 0.20 \log (P_m/P_D)_t + 1.79 \log Y_t - 0.55 \log m_{t-1}$		
(0.26)(-1.41) (2.50) (-3.10)		

Table VI.13: (Cont'd.)

	R^2	DW
Total Imports	0.86	2.21

$$\log m^d_t = \underset{(0.26)}{3.11} \underset{(-2.33)}{- 0.11} \log (P_m/P_D)_t + \underset{(3.21)}{0.64} \log Y_t + \underset{(1.66)}{0.18} \log m_{t-1}$$

[a] Consumer durable and non-durable goods

[b] includes imports of energy, spare parts and semi-finished goods

[c] includes transport machinery and equipment (excluding those for private use)

Turning now to the estimates of the disequilibrium model, the coefficient of export supply is positive in all cases but sesame. The trend term is positive and significant in 3 equations, namely, cotton, sesame and total exports. In groundnuts and gum it is negative and significant. The coefficient on domestic prices has the expected positive sign and is significant in all crops, except gum where it is positive but not significant. The coefficient on the lagged export price is positive and significant in all cases but groundnuts.

The short-run price elasticity of demand is negative and significant in all cases, except sesame. For all items, but groundnuts, the short-run price elasticities are smaller than the equilibrium price elasticities shown in Table VI.11. This is also true for the short-run income elasticities,(with the exception of sesame and groundnuts).

As noted before an estimate of the supply price elasticity can be obtained from the estimated versions of equations (6.22) and (6.26) by calculating $1/\hat{b}_1$ and $\frac{1}{\hat{d}_1(1-\hat{d}_4)}$ for the equilibrium and disequilibrium models, respectively. The computations are shown in Table VI.14.

Table VI.14: Computed Supply Price Elasticities

Exports	Supply Price Elasticities	
	Equilibrium	Disequilibrium
Gum Arabic	0.32	0.10
Groundnuts	0.38	0.12
Cotton	0.51	0.06
Sesame	-0.91	-2.25
Total Exports	0.49	0.04

Source: Computed from Tables VI.11 and VI.12.

An inspection of the price elasticities calculated from the equilibrium model shows that there are no wide variations across the different export crops. The largest positive supply elasticity is recorded by cotton (=0.51), while the smallest is for gum (=0.32). The exception here is sesame with a negative supply price elasticity. It can also be observed that the size of the supply price elasticity of total exports is very close to that of cotton. This is a direct reflection of the heavy weight cotton has in the country's export basket. The same observations are true for the supply price elasticities calculated from the disequilibrium model.

Turning to the results of the import demand function (Table VI.13) it is evident that the demand price elasticities are negative and significant in all cases, while the income elasticities are all positive and significant, except in the case of the demand for imported consumer goods, where it is positive but not significant. The short-run price and income elasticities of demand for imports and their long-run values (computed from the estimated equations) are shown in Table VI.15. It shows that the price elasticities for all import categories are very small indicating a highly price inelastic demand for imports. The long-run income and price elasticities are larger than the short-run elasticities in all cases, except capital goods.

Table VI.15: Price and Income Elasticities of Demand for Imports

Import Item	Long-Run Price	Long-Run Income	Short-Run Price	Short-Run Income
Consumer Goods	0.12	0.82	0.09	0.69
Raw Materials	0.36	1.69	0.28	1.30
Capital Goods	0.12	1.15	0.40	1.79
Total Imports	0.13	0.78	0.10	0.64

Source: Table VI.13

Does Devaluation Improve the Competitiveness and the Profitability of Exports?

We now turn to answer the questions, Is devaluation likely to improve the coefficient of competitiveness, defined as the ratio of foreign exchange earnings per unit of domestic resources used (C)%; is it likely to improve the profitability index, defined as the coefficient of competitiveness relative to the exchange rate (C/r)? The condition for C to improve ($\dot{C}>0$) is given in equation (6.8) i.e.:

$$\dot{C}>0 \quad \text{if} \quad w_1 K_X(1+S_X) - w_2 e_{P_m} - e_{P_D} - 1 > 0$$

The condition for (C/r) to improve ($(\dot{C}-\dot{r})>0$) is given in equation (6.9) i.e.:

$$(\dot{C}-\dot{r})>0 \quad \text{if} \quad w_1 K_X(1+S_X) - w_2 e_{P_m} - e_{P_D} > 0$$

To test whether these conditions are satisfied or not, estimates of the

equation parameters S_x, K_x, e_{P_m} and e_{P_D}, and the weights w_1 and w_2 are required. The supply price elasticity of exports (S_x) can be obtained from the estimates of the export supply equations in the previous section. Knowledge of the supply and demand elasticities of exports with respect to price, can also be used to measure the degree of pass-through of devaluation into higher export prices in domestic currency (K_x). It can be shown (Branson, 1972) that the degree of pass-through on the side of exports can be measured as $K_x=(1-S_x/D_x)^{-1}$, where S_x and D_x are the supply and demand elasticities, respectively. K_x varies between zero and unity. If demand is infinitely elastic and the export is being sold in a perfect market, $K_x=1$, and the export price in domestic currency rises by the full amount of devaluation. If demand is very inelastic and supply is very elastic $K \to 0$, the effect of devaluation is to reduce the foreign currency price of exports, rather than to raise the domestic price of exports. We can use the estimates of Tables VI.11, and VI.12 to compute the degree of pass-through as shown in Table VI.16 (excluding sesame where the sign in the supply equation is perverse). It can be seen that for each of the crops the degree of pass-through of devaluation into higher prices of exports in domestic currency is relatively high. The equilibrium estimates are lower than the disequilibrium estimates, because there is a bigger difference between the long and short-run elasticities of supply than between the long and short-run elasticities of demand. For exports in the aggregate we conclude that their price in domestic currency will rise by between 54% and 91% of the amount of the devaluation. We can use the estimates in Table VI.16 for inclusion in equations (6.8) and (6.9). It remains to see the effect of devaluation on the price of

Table VI.16: Estimates of Pass-Through

Export	Degree of Pass-Through (K_x) Equilibrium	Disequilibrium
Gum Arabic	0.67	0.83
Groundnuts	0.50	0.83
Cotton	0.48	0.86
Total Exports	0.54	0.91

Source: Calculated from Tables VI.11 and V.12

imported inputs in domestic currency (e_{P_m}), and on the price of domestic resources (e_{P_D}) and the weights W_1 and W_2.

It has not been possible to estimate the elasticity of the price of imported inputs with respect to a change in the exchange rate. It is unlikely, however, that foreign suppliers would reduce the foreign currency price of imports very much, if at all, in the face of any cut-back in demand, and thus it is assumed that this elasticity is likely to to be unity i.e. that the price of imported inputs rises by the full amount of devaluation ($e_{P_m}=1$).

The effect of exchange rate changes on the price of domestic inputs will differ between the short and the long-run. The short-run effect is the direct effect of import prices on domestic prices and wages. The long-run effect will depend on the response of wages to domestic prices and the feedback effect that this has on domestic prices. Here, the estimates of the wage-price model of Chapter Three can be used. In Chapter Three the following equations were estimated:

$$\dot{W} = \alpha_0 + \alpha_1 U + \alpha_2 \dot{P}_D$$

and

$$\dot{P}_D = b_0 + b_1 \dot{W} + P_2 \dot{Q} + b_3 \dot{P}_m$$

where $\dot{W}$ is the rate of change of money wages; U is the percentage level of unemployment, $\dot{P}_D$ is the rate of change of domestic prices; $\dot{Q}$ is the rate of productivity growth and $\dot{P}_m$ is the rate of change of import prices in domestic currency. On the assumption that import prices in domestic currency will rise by the same proportion as devaluation, the short-run relation between a change in the exchange rate and domestic resource cost is b_1 for input prices, and $\alpha_2 b_1$ for wages. The long-run relation for input prices is given by $b_3/(1-\alpha_2 b_1)$[†], and for wages, $\alpha_2 b_3/(1-\alpha_2 b_1)$. The estimation of these relationships in Chapter Three gave the following results; $b_3=0.48$; $b_1=0.56$ and $\alpha_2=0.785$. Hence the long-run elasticity of domestic input prices is 0.86, and the long-run elasticity of wages is 0.68. The elasticity of total domestic resource costs is taken as a weighted average of the two i.e., $e_{P_D}=0.75$. We assume this elasticity to be common for all exports.

The weights W_1 and W_2 are the proportions of export value, and the value of imported inputs, in total value added. Nashashibi gives the values, from which these weights can be derived, for all major exports except gum arabic[††]. The weights are given in Table VI.17.

[†] The weights are the proportions of non-traded good input costs and wage costs in total variable costs.

[††] Nashashibi (1980) *op. cit.*, pp.42-43.

Table VI.17: Export and Imported Inputs Values as Proportion of Value-Added

	W_1	W_2
Long-Staple Cotton	1.31	0.31
Medium;Staple Cotton	1.43	0.43
Groundnuts	1.41	0.41
Sesame	1.48	0.48
Gum[a]	1.05	0.05

Notes: W_1 = export value as a proportion of value-added

W_2 = imported input value as a proportion of value added

a: own estimate. Gum arabic uses very little by way of imported inputs - only in the packing process.

We now have the information needed to answer the question: Does devaluation improve the competitiveness and the profitability of exports? The values of the elasticities and parameters for each export crop, and in the aggregate, are summarized in Table VI.18. In making the calculations we take the estimate of export supply and pass-through from the equilibrium model, and the long-run estimate of the effect of devaluation on domestic resource costs. From Column(G) it can be seen that a combination of low elasticity of supply and a high elasticity of foreign and domestic prices to exchange rate devaluation leads to *a loss* of foreign exchange earnings per unit of domestic inputs for all exports. In aggregate we estimate that a 1% devaluation leads to a 1.02% loss of foreign exchange per unit of domestic inputs. The highest loss is for

Table VI.18: Measurements of the Effect of Devaluation on Export Competitiveness, and Export Profitability

	A	B	C	D	E	F	G	H
Export	Supply Elasticity S_x	Pass-Through k_x	Elasticity of Import Prices e_{pm}	Elasticity of Domestic Re-Sources Costs e_{pd}	w_1	w_2	Change in Competitiveness $\dot{C}$	Change in Profitability $(\dot{C}-\dot{r})$
Cotton	0.51	0.48	1	0.75	1.33[a]	0.33	-1.12	-0.12
Groundnuts	0.38	0.50	1	0.75	1.41	0.41	-1.18	-0.18
Gum Arabic	0.32	0.67	1	0.75	1.05[b]	0.05	-0.87	0.13
Sesame	-0.91	-	1	0.75	1.48	0.48	-	-
Total Exports	0.49	0.54	1	0.75	1.40[c]	0.40	-1.02	-0.02

[a]Weighted average of the values for medium and long staple cotton

[b]Own estimates. Gum arabic uses very little imported inputs

[c]Weighted average of major exports.

groundnuts with a low supply elasticity and pass-through. It is interesting to calculate what the export supply elasticities would have to be in order for the foreign exchange earned per unit of domestic inputs to increase. They are as follows: cotton 2.25, groundnuts 2.04, gum arabic 1.56 and total exports 1.85. These elasticities are high by any standards, but this is the order of magnitude if exchange rate devaluation is to improve the coefficient of competitiveness.

According to Nashashibi (1980) the devaluation of the Sudanese pound is justifiable to make export activities profitable at the existing exchange rate. From Column (H) it can be seen that for all exports (except gum arabic) the coefficient of competitiveness deteriorates faster than the foreign price of domestic currency, leading to a deterioration in the profitability index (C/r). The largest deterioration in profitabiliy is in the case of groundnuts where a 1% devaluation leads to a 0.18% deterioration in the profitability index. In the case of gum arabic, with a very low import content, the coefficient of competitiveness deteriorates by less than the fall in the foreign price of domestic currency, leading to a 0.13% improvement in the profitability index. In the case of exports in the aggregate, the profitability index is estimated to deteriorate by a 0.02% for each 1% devaluation.

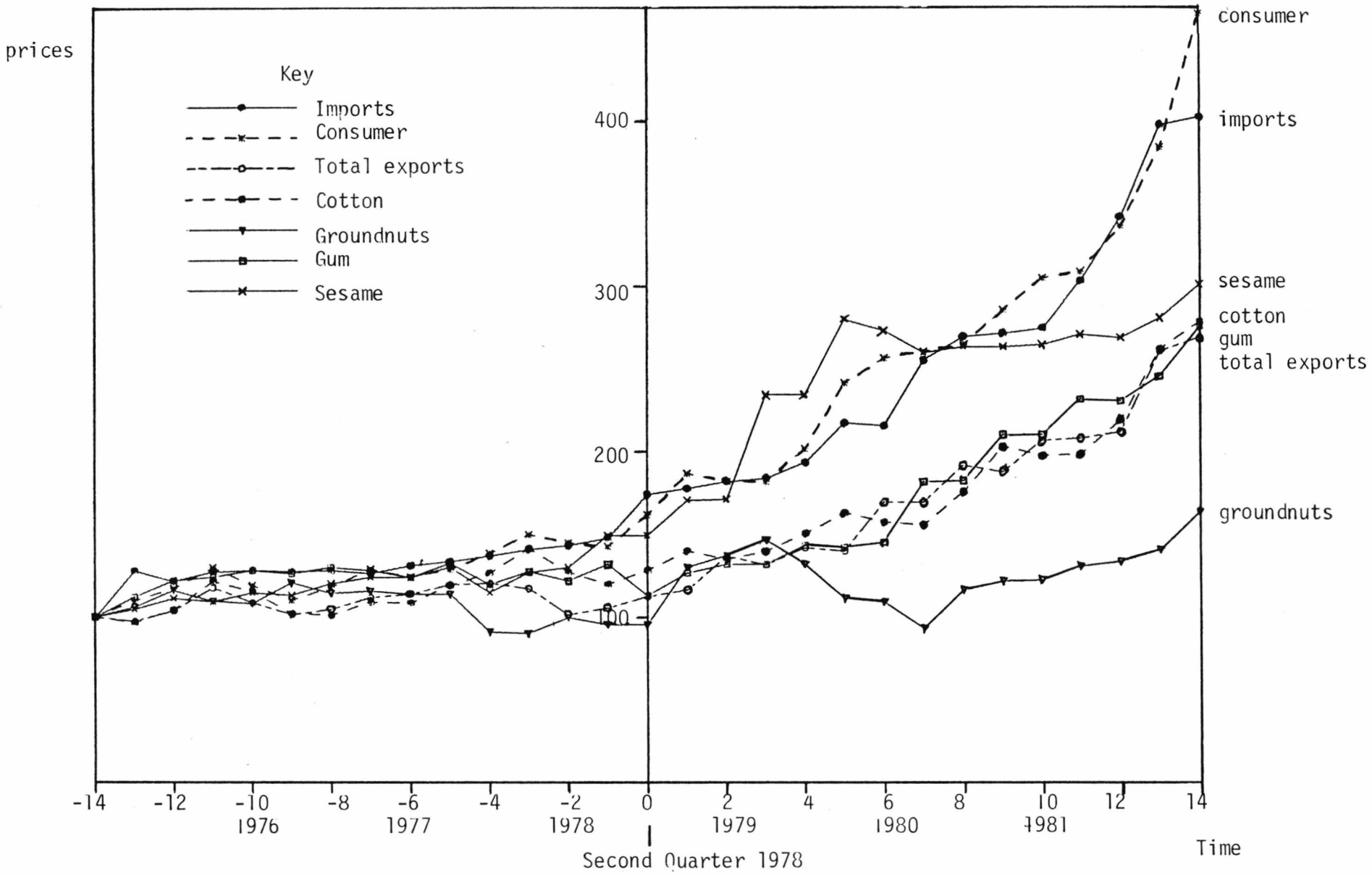
According to these results, devaluation does not only lead to a loss of foreign exchange earnings per unit of domestic inputs, but also leads to a deterioration in profitability. The exception here is gum arabic, where despite the fall in foreign exchange earnings per unit of domestic inputs, its production would still be profitable at the post-devaluation exchange rate. The estimation of the deterioration

in competitiveness and profitability will be overestimated only to the extent that the pass-through on the export side has been underestimated, and the inflationary effects of devaluation overestimated. It is to a more detailed analysis of price movements and export performance following the 1978 devaluation that we now turn.

The Behaviour of Prices and Exports Before and After Devaluation

In Figure VI.4 we plot for each export activity, and for exports as a whole, the export price against domestic wholesale prices and import prices (measured in domestic currency) on a quarterly basis for 14 quarters (or 3½ years) before and after the devaluation in the second quarter of 1978. The devaluation for cotton was from US$2.87 to US$2.5=Lsd 1 while the effective exchange rate for all other transactions was devalued from US$2.5 to US$2=Lsd1. In Septmeber 1979 this rate became the official rate, applying to 92% of exports (including cotton) and 70% of imports, and an additional parallel rate was instituted of US$1.25=Lsd1 to be used in all other transactions. Both devaluations were accompanied by anti-inflationary policies. These points must be borne in mind in considering the graphical data. Starting from base 100 in the first quarter of 1975, the first striking feature is the strong parallelism of the domestic wholesale and import price indices; perhaps rather stronger than we assumed in the earlier empirical calculations. Particularly after 1979, the domestic price index ran ahead of import price increases. The export price index, for exports as a whole, shows a steady divergence away from the domestic price index, opposite to what should

Figure VI.4: Relative Prices Before and After Devaluation



happen to make exporting more attractive than production for the home market.

Turning to the export price of individual commodities we see that only in the case of sesame did prices keep in line with the general level of domestic prices. In all other cases there is a divergence between export prices and domestic wholesale prices. In the case of groundnuts export prices rose marginally after the 1978 devaluation and then fell back.

If we assume that in the absence of devaluation prices would have continued at their trend rate, we may make a crude estimate of the contribution of devaluation to inflation in relation to the magnitude of the exchange rate change. The trend rates of growth of prices before and after June 1978 are given in Table VI.19 overleaf.

As far as import prices and domestic prices are concerned both appear to have risen roughly in line with the 27% devaluation. As far as export prices are concerned, the difference in the trend rate as a proportion of the devaluation gives an alternative measure of the degree of "pass-through". It is interesting to note (with the exception of Groundnuts), that the estimates here lie mid-way between the short and long run estimates reported in Table VI.16[†]. The results overall are consistent with the view thatdevaluation causes import prices to rise by more than export prices, resulting in some deterioration in the terms of trade. Moreover the rise in domestic prices exceeds the rise in export prices (measured in domestic currency) providing no extra incentive to produce for export. We now examine in more detail

---

[†] Between 1978 and 1980, the world price of Groundnuts fell by 23%. This fall in the foreign exchange price partly offset the pass-through of devaluation into higher Groundnuts prices in Sudanese currency.

Table VI.19: Trend Rates of Growth of Import Prices, Domestic Prices and Export Prices Before and After Devaluation (June 1978)

	Trend Growth % Before	After	Difference	Difference in Trend as a Proportion of Devaluation
Import Prices	12.0	37.0	25.0	0.93
Domestic Prices	14.3	42.2	27.9	1.03
Export Prices				
Cotton	7.4	23.8	16.4	0.61
Groundnuts	12.0	22.2	10.2	0.38
Sesame	0.6	19.0	18.4	0.68
Gum Arabic	10.9	27.6	16.7	0.62
Total Exports	7.0	23.0	16.0	0.59

the performance of export supply, and the production of exportables pre- and post-devaluation.

The Effect of Devaluation on Export Supply

To trace the effect of devaluation on the supply of exports, the actual volume of exports following the 1978 devaluation is compared with what it would have been in the absence of devaluation. To calculate this effect we utilize the equilibrium model of export supply and demand reported earlier. By using estimates of the independent variables assuming no devaluation we predict the volume of exports in the absence of devaluation and ascribe the difference between actual performance and the hypothetical performance to the devaluation[+]. This technique is open to the criticism, of course, that it is not possible to know with precision what the independent variables would have been in the absence of devaluation. An alternative before and after test was therefore also conducted. This test examines the production of exportables in seven agricultural seasons (four seasons before the IMF programme and three seasons after). Since this method concentrates on the production of exportables, rather than on what was actually exported, it nets out the effect of other factors which

---

[+] This is a technique used in many other studies of the effect of devaluation on exports. See for example Worswick, G. N. D. (1971) "Trade and Payments", in Britain's Economic Prospects (ed.) Cairncross A., (Allen and Unwin, London)

might contribute to a change in export supply, such as a change in the domestic consumption of exportables, an improvement or deterioration in transportation and marketing facilities, and so on. For each export crop, we report area under cultivation, yield per feddan and total output before and after June 1978.

Tables VI.20 and VI.21 show the results of the first test. The first column gives the actual volume of exports; the second column gives the predicted export supply on the assumption of no devaluation, and the third column gives the difference between the actual and predicted values. Two things are apparent from the tables. The first is that the predicted values do not exhibit large fluctuations, while the actual volume of exports has been quite erratic. The second is that on average, the actual export performance since devaluation has been considerably below that predicted on the basis of pre-devaluation performance. This would be consistent with the already observed deterioration in export prices relative to domestic prices. Other extraneous factors not captured by the model could also have played a part, relating to the production of exportables.

This leads on to our second "before-and-after" test. Here it is hypothesised that if the IMF programme was successful in providing the necessary stimulus to the export sector, this should be reflected in an increase in the land brought under cultivation, or an increase in the intensity of cultivation of existing land, thereby improving yield per feddan. Either should result in an increase in the production of exportables. We examine what happened for each crop.

For groundnut production, the area under cultivation, yield per feddan, and output are shown in Table VI.22.

Table VI.20: Actual and Predicted Export Supply of Groundnuts, Sesame and Gum, 1978:1-1981:IV (in thousand metric tons)

Time	Groundnuts			Sesame			Gum Arabic		
	Actual	Predicted	Difference	Actual	Predicted	Difference	Actual	Predicted	Difference
1978:1	319	301	18	26.0	19	7.0	6.57	7.73	-1.2
2	519	324	195	23.0	20	3.0	6.51	6.78	-0.27
3	440	321	119	13.7	22	-8.3	10.8	6.8	4.0
4	630	303	327	11.4	24	-12.6	8.68	10.3	-1.62
1979:1	164	314	-150	4.8	26	-21.2	10.35	10.4	-0.05
2	282	321	-39	5.5	26	-20.5	4.25	5.66	-1.41
3	61	333	-272	2.5	24	-21.5	5.95	4.57	1.38
4	58	367	-309	2.6	26	-23.4	16.9	10.4	6.5
1980:1	59	283	-224	21.3	23	-1.7	8.64	10.6	-1.96
2	104	324	-220	18.3	14	4.3	6.65	8.42	-1.77
3	10	326	-316	9.9	20	-10.1	3.47	8.32	-4.89
4	73	324	-251	11.2	16	-4.8	3.83	8.41	-4.53
1981:1	563	380	183	9.5	26	-16.5	8.32	8.62	-0.3
2	1155	390	765	24.0	26	-2.0	8.66	6.32	2.34
3	322	380	-58	7.6	21	-13.4	11.05	8.42	2.63
4	303	340	-37	23.8	26	-2.2	7.33	10.46	-3.13

Table VI.21: Actual and Predicted Export Supply of Cotton and Total Exports (1978:I-1981:IV)

Time	Cotton[a]			Total Exports[b]		
	Actual	Predicted	Difference	Actual	Predicted	Difference
1978: 1	122.8	198.0	-75.2	100.0	151.0	-51.0
2	152.7	200.0	-47.3	103.0	107.0	-4.0
3	199.6	200.0	-0.4	112.0	114.0	-2.0
4	458.8	356.0	102.8	148.0	142.4	5.6
1979: 1	273.3	306.0	-32.7	149.0	150.0	-1.0
2	119.2	217.0	-97.8	49.2	85.6	-36.1
3	280.6	320.0	-39.4	93.2	118.4	-25.2
4	319.8	356.0	-36.2	138.0	137.2	0.8
1980: 1	260.0	327.0	-67.0	139.0	215.6	-76.6
2	131.6	261.0	-129.4	85.6	148.4	-62.8
3	114.6	264.0	-149.4	79.2	132.0	-52.8
4	158.0	256.0	-98.0	94.0	100.0	-6.0
1981: 1	118.4	278.0	-159.6	74.0	99.7	-25.7
2	92.0	206.0	-114.0	96.0	107.0	-11.0
3	39.5	220.0	-180.5	44.8	85.6	-40.8
4	96.5	328.0	-231.5	59.6	96.2	-36.6

[a]Supply in thousand bales

[b]Volume index

It is clear from Table VI.22 that both areas under cultivation and output were volatile both before and after devaluation. There was a big increase in area and output in the 1977/78 season, but this preceded the June 1978 devaluation. After 1977/78, both area and output declined. Also, yield per feddan was slightly lower on average post-1978 than pre-1978.

Sesame production is shown in Table VI.23 over the entire period 1973/74 to 1980/81, there was hardly any change in the area under cultivation, but yield and output both fell after 1976/77. This trend was partly the result of labour shortages in the harvesting season and partly the result of a switch to the production of sorghum. According to the calculations of Nashashibi the switch from sesame to sorghum production is slightly puzzling since sesame had a coefficient of competitiveness of US$2.68 per unit of domestic resources used compared with 2.08 for the production of sorghum. Additionally, sesame was said to have a smaller import content (35.8%) compared with sorghum (57.8%). Devaluation might therefore be expected to have favoured sesame. The puzzle is resolved by noting that the domestic price of sorghum (which is the staple food for the majority of the population) increased dramatically following devaluation making its production for home consumption more profitable than sesame for export†.

The production of gum arabic is shown in Table VI.24. Area and yield are not shown because gum trees grow in the wild over the entire savannah region (and therefore are not known). Production again is seen to be highly irregular, with particularly low output after 1978/79.

---

† A large part of sorghum output is also smuggled to neighbouring countries such as Chad and Ethiopia, for a substantially higher price than either the domestic or export price.

Table VI.22: Groundnuts Production Before and After the IMF Programme

	Before					After		
	1973/4	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Area	1,724	1,717	2,066	1,894	2,629	2,330	2,352	2,062
Yield	0.31	0.51	0.45	0.40	0.39	0.34	0.36	0.41
Output	543.0	875.0	931.0	740.0	1,021.0	810.0	852.0	
Annual Growth of Output (%)	11.4	61.0	6.4	-21.0	37.0	-33.0	5.2	-0.11

Source: Calculations from Bank of Sudan Annual Reports. Area in thousand feddans; Yield in metric ton per feddan, and output in thousand metric tons

Table VI.23: Sesame Production Before and After the IMF Programme

	Before					After		
	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Area	2,167	2,199	2,291	2,288	2,349	2,061	1,989	2,011
Yield	0.11	0.12	0.10	0.11	0.10	0.10	0.10	0.10
Output	240	282	288	253	245	215	209	211
Average Growth of Output (%)	28.9	17.5	-15.6	6.3	-3.2	-12.2 -12.2	-2.8 -2.8	0.96 0.96

Source: Calculations from Bank of Sudan Annual Reports. Area in thousand feddans; yield in metric tons per feddan, and output in thousand metric tons.

Table VI.24: Gum Production Before and After the IMF Programme

	Before					After		
	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/81
Output	23.5	46.5	43.0	26.2	39.3	35.0	23.5	20.6
Average Growth of Output (%)	28.0	98.2	-7.5	-39.0	50.0	-16.6	-32.8	-12.3

Source: Calculations from Bank of Sudan Annual Reports. Output in thousand metric tons.

Table VI.25: Cotton Production Before and After the IMF Programme

	Before					After[a]		
	1973/74	1974/75	1975/76	1976/77	1977/78	1978/79	1979/80	1980/80
Area	1,178	1,228	988	1,030	1,089	917	891	892
Yield	2.3	2.2	2.3	3.2	3.4	2.8	2.3	2.3
Output	4,741	4,534	2,276	3,268	3,598	2,464	1,896	2,051
Averate Rate of Growth of output (%)	3.4	-4.3	-50	44	10	-32	-23	8.2

[a]Excluding area and output of the Rahad scheme initiated in 1973 and which started production in the 1977/78 season.

Source: Calculations from Bank of Sudan Annual Reports. Area in thosuand feddans; yield in kantars per feddan; output in thousand kantars.

This can largely be attributed to infestation by locusts; labour shortages, and tree cutting for the purpose of firewood and charcoal making as a substitute for electricity and gas.

Cotton production (the backbone of the Sudanese economy) fared very badly after devaluation as Table VI.25 shows. This was partly the result of yield deterioration and partly the result of a reduction in land under cultivation. In the 1978/79 season there were heavy rains and floods which covered most of the cotton areas, and the situation was aggravated by a shortage of imported inputs such as fertilizers and insecticides. In the 1979/80 season, the IMF policies themselves caused the farmers to strike which accounted for a large part of the fall in output. The shortage of labour during the picking season also contributed to the poor yield. The deterioration in the yield and output continued in the 1980/81 season despite the various incentive schemes introduced by the government in conjunction with the IMF, including the amendment of the Gezira partnership scheme allowing the farmers to receive the full benefit of any excess in production above a specific average yield per feddan.

Some Related Remarks

What the preceding analysis shows is that there is no evidence to suggest that devaluation made any difference to the incentive to produce more exportables. Production of all exportables declined after 1978, and it would be very difficult to argue that had it not been for

devaluation output would have fallen even more. The pattern of output movements is summarised in Figure VI.5. Output itself has more to do with such factors as weather, efficiency, the availability of complementary inputs, and long-term development strategy than the annual foreign price of domestic currency. The Sudanese agricultural sector has been plagued with several problems since the early 1970s, which the IMF policies have done little to help. The problems may be summarised as follows:

(a) shortage of labour during the picking seasons;

(b) general shortages of labour;

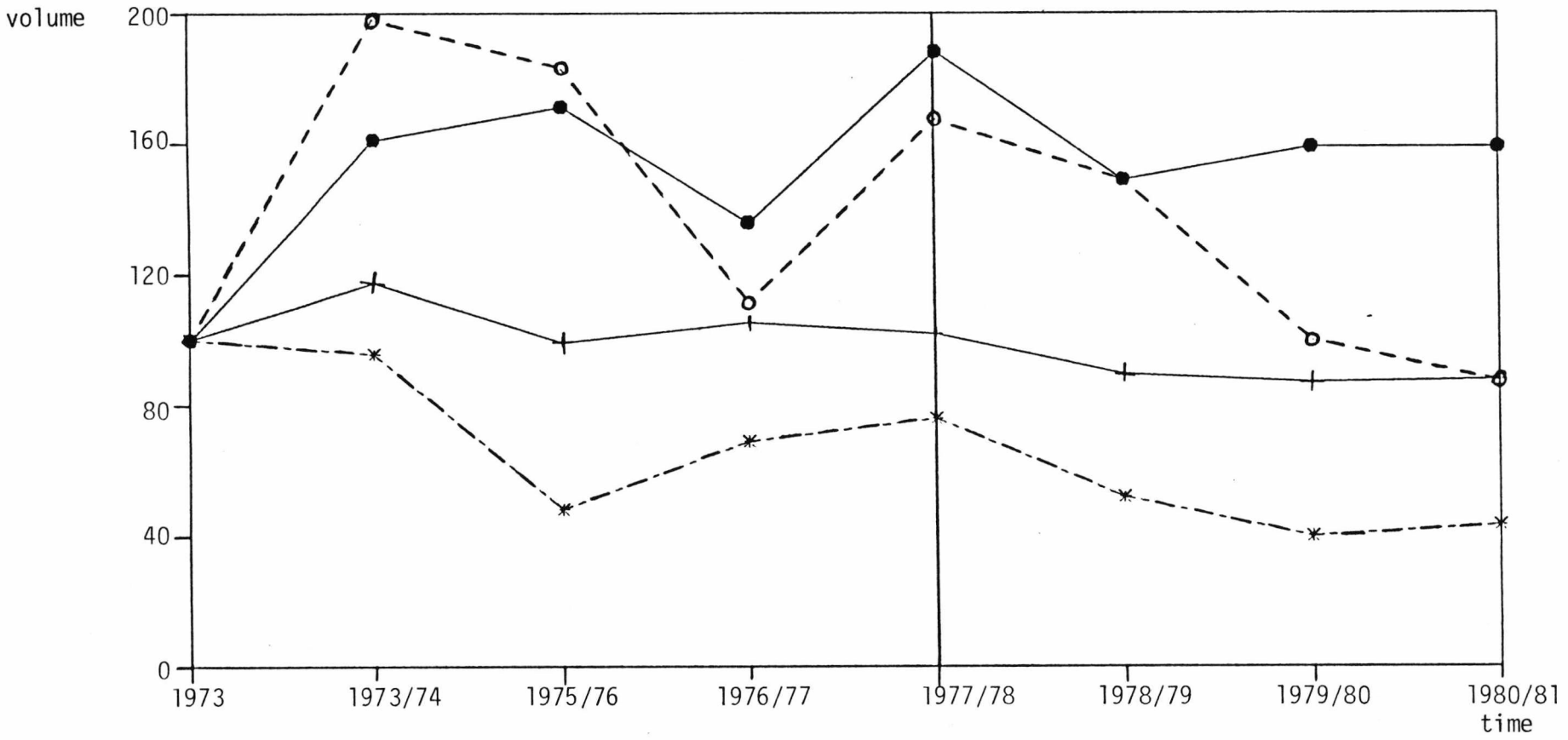
(c) shortages of fertilizer, insecticides, and other imported inputs;

(d) shortages of fuel and spare parts reducing the efficiency of road and rail transport; and

(e) the frequent failure of electric power due to lack of investment and spare parts for existing power stations.

The major cause of labour shortage in agriculture is low relative wages, poor working conditions, and a scarcity of basic consumer goods in agricultural areas. Over the period 1978 to 1982, the general movement of labour from agricultural to urban areas grew as the shortage of consumption goods became more severe, working conditions worsened, and public services deteriorated. To ensure adequate supplies of consumption goods to rural areas and foreign exchange for necessary inputs, tight import controls are required - not liberalization. A dramatic example of the need to rationalize imports is the recent

Figure VI.5: Production Before and After Devaluation



phenomenon of the importation of household electricity generators. The practice was stimulated in the first place owing to a shortage of foreign exchange to buy fuel and spare parts for the public electricity supply, and was then made easier by the IMF-imposed relaxation of import controls.

The division of output between home use and exports depends partly on the relative profitability of production for the two markets. According to our results, there is no evidence of an increase in the the supply or even the production of exportables. On the contrary the Fund's policy might be said to have had adverse effects on the production and the supply of exportables. This is not only because the policy did not get off the ground as domestic prices increased by more than export prices, thereby working as a disincentive to the expansion of exports, but also because of the many problems troubling the Sudanese agricultural sector since the early 1970's which the implementation of the Fund's programme made more difficult.

Devaluation and the Balance of Payments

It was shown in the previous section, that the profitability of export activities as well as the supply of total exports, deteriorated as a result of devaluation. However, for the economy as a whole, the success of devaluation should not be judged by its effect on the export sector alone, but rather by its effect on the country's external position, as measured by its balance of payments. Viewed from the

supply side of exports, the condition for the balance of payments to improve, as a result of devaluation, is given by equation (6.18). That is the balance of payments will improve (i.e., $\dot{B}>0$) if:

$$(K_X-1) + S_X (K_X-e_{P_D}) + \psi(1-f_D) - \pi y > 0$$

where (K_X-1) is the terms of trade effect, $S_X(K_X-e_{P_D})$ is the export supply effect, $\psi(1-f_D)$ is the price effect on import demand, and $(-\pi y)$ is the income effect on the demand for imports. Our previous estimates provide estimates of all the elasticities required to apply equation (6.18), except f_D and y. Ideally, f_D measures the price elasticities of the prices of domestic import substitutes with respect to a change in the exchange rate. As price indices of import substitutes are not available, it is assumed that the price of import substitutes in domestic currency will rise by the same proportion as the increase in the general price level. In Chapter Three it has been estimated that a 1% devaluation would cause domestic price to rise by 0.48% in the short-run and by 0.86% in the long-run. These figures are used as estimates for f_D in the short- and long-run respectively. It has not been possible to design a method that can estimate y, (the elasticity of real domestic income with respect to a change in the exchange rate), with great accuracy. For this reason the model will first be fitted assuming that real domestic income will not be affected by devaluation, i.e., y=0. The results can then be used to calculate (given the value of the income elasticity of demand for imports), the reduction in income that would have to prevail for devaluation to improve the balance of payments, or conversely, the maximum increase in real income that would have to be observed,

beyond which the balance of payments would deteriorate.

Having obtained estimates of all the required elasticities (see Table VI.26), we are now in a position to apply equation (6.18). The equation is estimated for both the short-run and the long-run. For the short-run, disequilibrium estimates of K_x and S_x for total exports, together with the short-run esimates of f_D, and e_{P_D} are used. For the long-run equilibrium estimates of K_x and S_x together with the long-run estimates of f_D, e_{P_D} are used. The results are shown in Table VI.27.

Table VI.26: Elasticity Values for Application of Equation (6.18)

Elasticities	Short-Run	Long-Run
K_x	0.91	0.54
S_x	0.11	0.49
e_{P_D} †	0.41	0.75
f_D	0.48	0.86
ψ	-0.10	-0.13
π	0.64	1.23
y	0.0	0.0

† A weighted average of the effect of devaluation on input prices and money wages. The weights are the proportions of non-traded good input costs and wage costs in total variable costs.

Examining first the short-run estimates, it is evident that export prices in domestic currency increased by less than in proportion to devaluation resulting in a deterioration in the terms of trade. This deterioration amounts to 0.09% for a 1% devaluation. On the other hand, devaluation offers a price advantage for exporters as their prices in domestic currency increased faster than their domestic costs. This price advantage amounts to 0.50 , for a 1% devaluation. However, because of the sluggish response of export supply to price changes, the outcome of the export supply effect on the balance of payments is favourable but very small amounting to 0.055%. Devaluation also offers a price incentive to switch demand away from foreign goods. But as the demand for foreign goods is highly elastic to relative price changes, the outcome is favourable but minute. However, the sum of these favourable effects is just sufficient to outweight the adverse terms of trade effect, and in the short-run the balance of payments (defined as the ratio of total export earnings to total imports) is estimated to improve by just 0.017 for a 1% devaluation. (See Table VI.27 overleaf.)

The long-run estimates show that the terms of trade deteriorated by 0.46% as a result of a 1% devaluation. The short-run price incentive in the export sector turned into a price disadvantage, as the long-run increase in domestic costs exceeded the long-run increase in export prices in domestic currency. The price incentive to substitute home goods for foreign goods, diminished as domestic prices increased by 86% of the amount of devaluation. Putting the different effects together, the balance of payments, in the long-run, is estimated to deteriorate by 0.55% for each 1% devaluation.

Table VI.27: Devaluation and the Balance of Payments: Application of Equation (6.18)

	Terms of Trade Effect (K_X-1)	Export Supply Effect $S_X(K_X-e_{P_D})$	Price Effect on Import Demand $\psi(1-f_D)$	Income Effect on Import Demand $(-\pi y)$	$\dot{B}/\dot{r}$
Short-Run	-0.09	0.11(0.50)	0.10(0.52)	-0.64(0.0)	0.017
Long-Run	-0.46	0.49(-0.21)	0.13(0.14)	-0.78(0.0)	-0.55

These results show that devaluation adversely affects the balance of payments in the long-run . But the results are based on the assumption that devaluation would not affect real domestic income. By reducing real domestic income devaluation might reduce the demand for imports sufficiently enough to improve the payments balance. Given the values of all other parameters it is estimated that real domestic income would have to fall by 0.71% as a result of a 1% devaluation, for the balance of payments to improve. This suggests that the 27% devaluation which the country undertook, would have to cause real domestic income to deteriorate by 19.1%, for the balance of payments to improve. These, if compared with the actual deterioration in the course of the four years following devaluation, which amounted to a total of 3.0%, suggests that, even when the income effect on the demand for exports is taken into account, the balance of payments probably deteriorated as a result of devaluation.

Concluding Remarks

In the course of this study various tests have been conducted to assess the effect of the IMF programme on the Sudanese economy. From these tests there is little evidence that the IMF programme has achieved its objectives. Over the programme period, the supply of exports deteriorated, the import bill increased, the balance of payments worsened, inflation soared, and the country's growth rate fell from 2.8% to -2.3%.

Table VI.28: Some Social and Political Consequences of the IMF Programmes in the Sudan

Arrangement	Event	Immediate Causes
Extended Arrangement (1979)	A. Five-day strike by railway workers demanding wage increases and reduction in the cost of living.	A,B: Large increases in the prices of stable foods and other essential goods and services.
	B. Seven-day student riots in Khartoum which were officially stated to have caused much damage and destruction.	
	C. Farmers went on strike and refused to grow the 1979/80 cotton.	C: Farmers were made to pay more for water and grow cotton rather than wheat.
	D. Vice-President Abul Gassim was dropped.	D: Scapegoat.
	E. General Abdul Magid Khalil appointed Vice-President.	E: To take tough line against "trouble-makers".
Stand-By Arrangement (1981)	F. Fifteen-day riots in the country's major cities. Ten people were shot dead by the police.	F,G: An estimated 62% immediate increase in the prices of staple food and other essential goods and services.
	G. Street demonstrations by university and secondary school students resulting in government closure of schools and universities indefinitely.	
	H. The Committee and the politburo of the Sudanese Socialist Union was dissolved.	H,I: Blamed for the J. deterioration in the country's economic situation.
	I. The dismissal of all Ministers.	
	J. The Vice-President was dropped and replaced by General O. Eltayeb.	

In addition to this, the programme resulted in great suffering and hardships to consumers. The so-called "IMF riots" which the Sudan experienced over the programme period is a clear manifestation of these hardships. Table VI.27 lists some of the social and political consequences of the IMF programme. These range from the railwaymen's strike in August 1979 to the dissolution of the Politburo and the dismissal of all ministers in 1981. As the government's popularity fell owing to the hardships imposed by the IMF programmes, it adopted a policy of force and mass repression. In 1981, a social uprising against the IMF policies endorsed by the government, was quelled by army troops and ten people were shot dead.

After five years of the IMF policies, the economy of the Sudan shows no sign of recovery. The general economic situation has become even worse. By the end of 1982 the country was on the verge of total economic collapse. Economic activity was badly disrupted, not only because of the shortages in fuel, parts and rawmaterials, but also because workers and government employees queued to receive their daily rations of food instead of going to work. Social and political break down with a dramatic change in power became likely. The US responded to this situation by launching military aid programmes worth US$100 million, while the Fund was negotiating the conditions of a US$500 million loan. In December 1982 the Sudanese pound was devalued by 40% as a precondition for the IMF assistance. The details of this agreement are not yet known, but its size indicates that the Fund is intending to conduct the country's economic affairs for many years to come.

APPENDIX A: The Relative Price Indices on Which Figures VI.1, VI.2 and VI.3 were based are given below

Time	Relative Price Index		
	Export/Import	Consumer	Wholesale
1969: IV	0.0	0.0	0.0
1970: 1	0.125	0.015	0.051
2	0.150	0.037	0.061
3	0.177	0.008	0.543
4	0.006	-0.037	0.038
1971: 1	0.116	0.007	0.131
2	0.130	0.026	0.055
3	0.085	-0.207	-0.007
4	0.044	-0.057	-0.122
1972: 1	0.532	-0.049	-0.148
2	0.062	-0.042	-0.051
3	-0.017	-0.116	-0.100
4	-0.148	-0.233	-0.304
1973: 1	-0.096	-0.183	-0.271
2	-0.159	-0.242	-0.261
3	-0.140	-0.227	-0.301
4	-0.241	-0.318	-0.376
1974: 1	-0.095	-0.188	-0.405
2	-0.051	-0.149	-0.382
3	-0.188	-0.271	-0.403
4	-0.253	-0.322	-0.444
1975: 1	-0.362	-0.427	-0.367
2	-0.356	-0.420	-0.447
3	-0.413	-0.472	-0.559
4	-0.492	-0.544	-0.586
1976: 1	-0.361	-0.420	-0.538
2	-0.401	-0.485	-0.511
3	-0.392	-0.351	-0.504
4	-0.285	-0.269	-0.531

Source: Computations based on data obtained from IMF International Financial Statistics, Department of Statistics, Ministry of Planning and Bank of Sudan Annual Reports

CHAPTER SEVEN

CONDITIONALITY: THE EXPERIENCE OF JAMAICA

Introduction

In the previous chapters, the economic and political consequences of the IMF programme in the Sudan were examined. This chapter attempts to shed more light on the question of the IMF conditionality, by drawing on the experience of Jamaica (1976-82). In contrast to The Sudan, Jamaica has a well established multiparty parliamentary system with government elections fought predominantly on economic issues. Also, the economy of Jamaica, unlike that of The Sudan, is heavily dominated by foreign investment with a large proportion of the country's GDP produced by foreign firms. After giving a brief introduction to the Jamaican economy, the chapter examines the political and economic developments that led to the IMF intervention in Jamaica. It also examines the IMF policy conditions during the 1977 Stand-By Arrangement and the 1978-80 Extended Arrangement. The appropriateness of the IMF diagnosis is analysed, and the effectiveness of prescriptions is examined in relation to the targets set by the IMF. This chapter paves the way for Chapter Nine which applies the value-added model and the supply side balance of payments model to the economy of Jamaica.

Economic Background

The economy of Jamaica is heavily dominated by the bauxite/aluminium industry, which provides about 65% of the country's foreign exchange earnings. The mining of bauxite and the production of aluminium in Jamaica is carried out by five major American companies: Alcoa, Kaiser, Revenue, Reynolds and Alumina Partners. These companies together own, or lease 80% of the country's estimated bauxite reserves. The bauxite industry is highly capital-intensive, employing slightly more than 7,000 persons or less than 1% of the labour force. All the bauxite produced by these companies is exported to their American parent companies, either as aluminium or in its raw state for processing into aluminium ingots.

The second most important source of foreign exchange, after bauxite, is tourism. The value-added by tourism is scattered among several sectors of the economy. However, tourism is estimated to provide about 30% of the foreign exchange earnings. As a foreign exchange earner, sugar exports comesthird in importance, with an average share in total export earnings amounting to 18%.

Unlike most developing countries, wages in Jamaica are determined largely through collective bargaining. Industry-wide collective bargaining is not typical, although it is practiced in some industries, including sugar and bauxite. There are two major trade unions, each with about 150,000 members, controlling together about two-fifths of the labour force. The unions are affiliated with the two major political parties the National Workers Union with the Peoples National Party (PNP), and the Bustamante Industrial Trade Union with the Jamaican Labour Party (JLP).

The pay structure in Jamaica is characterized by wide wage differentials between skilled and unskilled workers. During the period 1960-1970 the average wage ratio between skilled and unskilled workers, was 20 to 1. In 1974 the government introduced a legal minimum wage to reduce the differential to a ratio of 10 to 1.

Developments During the Period (1960-1972)

The period (1953-72) was a period of rapid economic growth in Jamaica averaging 10% a year. This economic growth was associated with a large expansion of the buaxite/aluminium and construction industries. The expansion of the buaxite industry was the vehicle of economic growth during that period. The years of largest bauxite investment were those of highest GDP growth and highest growth in the construction sector (Table VII.2). Being highly dependent on imports of foodstuffs, and raw materials, such an expansion could not be achieved without putting pressure on the balance of payments. The cumulative balance of payments deficit over the period amounted to some 807 million Jamaican dollars (J$). The country became totally dependent on inflows of private foreign direct investment and foreign offical borrowing from foreign commercial banks to finance its balance of payments deficit. It is clear from Table VII.1 that private capital inflows during the period considered represented a considerable proportion of the current account deficit. Also, direct foreign investment in the bauxite industry constituted a large proportion of the total investment.

Table VII.1: Jamaica: Data on Foreign Investment and the External Sector

Year	Current Account	Direct Foreign Investment in Bank	Foreign Investment as a % of the Total	Bauxite/Alumina Exports as a % of Total Exports	Imports of Raw Materials as a % of the Total
	$M	$M			
1953	-8.4		31	11.0	-
1954	-1.2		26	20.0	26.0
1955	-12.4	101[a]	38	26.8	24.9
1956	-26.0		41	27.2	24.3
1957	-23.3		29	43.4	24.0
1958	-20.8		29	46.4	24.0
1959	-32.5	9	27	45.0	24.6
1960	-21.2		16	49.3	22.8
1961	-8.8		6	49.5	24.9
1962	-12.4		6	48.4	25.1
1963	6.6	56	7	42.2	24.5
1964	-31.2		25	44.5	25.6
1965	-21.8		17	47.2	26.5
1966	-30.1	380	20	46.5	26.1
1967	-50.6		27	49.1	25.8
1968	-86.2		32	48.6	25.2
1969	-103.0		35	55.5	32.7
1970	-128.3		28	65.9	31.9
1971	-95.0	117[b]	43	63.4	36.1
1972	-100.0		45	62.6	36.3
TOTAL	-806.6	664			

Source: National Planning Agency, a: includes 1950-52 b: includes 1973-74.

Table VII.2: Real GDP By Sector, 1953-1972 (in Million J$)

Year	Real GDP			
	All Sectors	Mining and Refining	Construction	Agriculture
1953-1959 (average)	318.6	19.1	35.1	43.8
1960	430.5	41.4	51.4	51.8
1961	447.5	44.8	49.0	52.8
1962	456.4	46.8	48.6	51.6
1963	467.5	46.2	48.6	53.6
1964	503.4	50.8	53.6	56.7
1965	543.8	54.6	58.2	58.4
1966	567.7	58.6	54.4	62.7
1967	589.7	60.0	56.4	60.9
1968	619.8	61.0	68.7	58.7
1969	666.1	75.8	70.1	56.0
1970	734.2	99.5	72.3	62.8
1971	774.3	106.3	73.2	70.0
1972	825.2	115.7	72.5	70.1

Source: National Planning Agency

The rise in economic activity during this period did not have an appreciable impact on employment. This was partly because much of the country's growth was in the capital-intensive bauxite industry, and partly because the more labour-intensive sugar industry remained relatively stagnant. Unemployment grew and income inequality widened. In short, the period 1953-1972(besides the rapid economic growth)was also characterized by growing economic dependence; rising unemployment; widening income inequalities; and growing tension between income groups. These tendencies were particularly sharp in the 1960's during the Conservative JLP Government. The unemployment rate rose from 13% in 1962 to over 24% in 1974. Income distribution worsened. Over theperiod 1958-1968 it is estimated that the share of the poorest 40% of the population in personal earned income declined from 7.2% to 5.4%[†]. Moreover, during the same period the absolute income of the poorest 30% of the population fell from US$32 to US$25 per capita in constant 1958 dollars. The slum areas in Kingston were ridden with growing unemployment, poor housing and violent crime. This state of affairs deeply influenced the 1972 elections which resulted in a victory for the Peoples National Party under the leadership of Michael Manley.

Developments During the Period (1974-1976)

The developments that took place during this period are very important in understanding the causes of the Jamaica-IMF conflict in subsequent years. In 1974 the government of Mr. Manley (Jamaica's Prime Minister

---

[†] Girvan, N., Berneal,R. and Hughes, W. (1980) "The IMF and The Third World: The Case of Jamaica", Development Dialogue p.115.

1972-80), introduced an economic programme involving a total change in Jamaica's development strategy. Mr. Manley described his economic programme as

> *"... the government's commitment to ensure that all developments take place in accordance with the needs and goals of the society; the government must supervise the running of the economy by a combination of direct ownership, control by participation, regulating machinery, and the creation of appropriate incentives and opportunities"*[†].

Among the principal initial aims of the government's economic policy were the reduction of an estimated 25% urban unemployment rate through a J$ 53 million employment programme. The programme also involved the introduction of minimum wage legislation to improve the living standards of the unskilled workers who constitute about 60% of the total labour force. Other costly programmes to which the government was committed included restructuring the rural sector through land redistribution, and incentives to produce foodstuffs. The programme also included the intensification of import substitutes.

To carry out such a programme, a large expansion in government expenditure was needed. At that time the fiscal deficit was already running at a rate amounting to 5% of GDP, and all the traditional sources of government revenue were used to the limit. As a result the government thought to increase its revenue by introducing a new system of calculating the royalties paid by the foreign bauxite mining companies. This move on the part of the Manley government, together with its intention to participate in the production of bauxite were behind Jamaica's economic problems in subsequent years.

In May 1974, the government of Mr. Manley imposed a 50 cent levy on every ton of ore extracted by foreign companies. The companies were

---

[†] West Indies Chronicle, 27, 8, 1976.

also made to pay royalties at a rate of 7.5% of the realized price of finished aluminium ingot (rising to 8.5% in two years). Accordingly, the government revenue from this source, was to increase from J$36 million to J$240 million. In taking this step, the Jamaican authorities were understood to be motivated by the decline in their bauxite revenue in a period of increased production, due to the companies internal pricing arrangement, under which artificially low prices were charged by the Jamaican subsidiaries for bauxite exported to their American Parent Companies. At the same time, Jamaican sources stated that this move to increase revenues from bauxite was to be followed by other decisions designed to control bauxite resources. This included nationalization of bauxite deposits and the land owned by mining companies. The basic moves in this direction were as follows:

(a) On November 21, 1974, a participation agreement had been concluded with the Kaiser Aluminium Corporation involving the purchase by the Government of a 51% shareholding in its Jamaican subsidiary (the Kaiser Bauxite Company); this agreement was to be effective on January 1977;

(b) In 1976 a similar agreement had been reached with the Reynolds Metals Company, to be effective on March 1977; and

(c) In 1976 a third agreement had been concluded with the Aluminium Company of America (AlCoa) in respect of its local subsidiary Alcoa Mineral of Jamaica; the Agreement was to be effective in 1977[†].

[†] The remaining foreign-owned bauxite companies, which had in early 1977 still to reach agreement in respect to the government participation in their Jamaican operations were Alcon and Alumina Partners.

Although the details of these agreements are not within the scope of this study, the government's decision to participate in the bauxite industry, and the dates on which this participation was to be effective are of great importance to the analysis of the economic crisis in Jamaica, and its conflict with the IMF in the (1977-80) period.

Even before the dates on which these agreements were to be effective the government's decision to participate in the production of bauxite, resulted in two serious blows to the Jamaican economy. The first was that the foreign companies, which control more than 65% of the export sector, unhappy with the government's decision (which threatened their interest in Jamaica), retaliated in an attempt to put pressure on the government to abandon its participation plans. This retaliatory action took the form of deliberate reductions in the demand for the Jamaican-produced bauxite by the American parent companies, followed by production cut-backs by their Jamaican subsidiaries. One year after the government decision the production of bauxite was cut back by about 28%. The total bauxite production was as low as 12 million tons in 1975 compared with 14.3 million tons in 1974. This drastic fall in production was attributed by the bauxite companies to a 19.3% decline in the production of aluminium in North America, while the IMF (when analysing the causes of the Jamaican balance of payments crisis in 1977) attributed this fall to the *"bauxite levy introduced in 1974, and to the fall in the World demand for bauxite"*[†]. It failed to mention that there were retaliatory actions by the International Aluminium Corporations to boycott Jamaican bauxite exports.

[†] Kincaid, G. R. (1980) "Fund Assistance to Jamaica", IMF Survey, December.

The second blow was that the Government actions which were interpreted by the US, as a move towards *"Cuban-style socialism"*[†] caused foreign capital to leave the country. The inflows of capital from private foreign direct investment, and the short-term loans from private commercial banks, which were the main source of financing Jamaica's balance of payments deficits dried up. During the period 1974-76 Jamaica had to repay more than 69% of its debt to foreign commercial banks. Capital outflows including loan repayments and investment income increased by 195%. This capital outflow was financed partly by official borrowing, and partly by running down the country's reserves. Between 1974-76 Jamaica's external public debt increased by 150% while official reserves fell by 164%.

This situation was further aggravated by the reduction in the receipts from tourism by 112%(from J$116 million to J$5.2 million) which the government of Jamaica attributed to the extensive US press coverage of the threat to law and order in Jamaica. Another factor was the reduction in sugar production and other agricultural crops in the 1975/76 agricultural season due to the severe drought in 1975. In short the drastic fall in bauxite exports, coupled with a large increase in invisible expenditure (comprising investment income and growing interest payments on the country's external debt), were among the main factors behind the deterioration in the current account deficit during the period 1974-76. By the end of 1975 the country's current account deficit amounted to J$257 million, or 8% of GDP.

[†] This view was also expressed by Mr. Seaga the leader of the opposition JLP.

By early 1976 US Banks dropped Jamaica's credit rating from A to D[†]. This was followed by the curtailment of commerical lending by all American banks. The banks explained their actions stating that the Jamaican economy was not showing any sign of progress[††]. A possible explanation may lie in the old "tough" policy by US officials to refuse credit to any foreign country which aims to nationalize American private property[‡]. Other private commercial banks followed in concert and by March 1976 international commercial banks ceased all new lending to Jamaica. In April 1976 the Jamaican economy showed its first "negative" net foreign reserves, falling short of outstanding liabilities by J$1.9 million. This situation was temporarily alleviated by a financial scheme drawn up in June by Trinidad and Tobago amounting to US$88 million, and a long-term loan from Canada, of 65 million Canadian dollars for the purchase of Canadian goods and services.

Under this severe economic crisis, the ruling People's National Party headed by Mr. Manley had to fight the 1976 elections against the Jamaican Labour Party headed by Mr. Seaga. In its election manifesto the PNP party was still committed to its economic strategy which it had followed since 1974. It also promised that the party if re-elected would continue to give priority to the redistribution of national resources in the intrest of greater social justice. The opposition JLP party supported by major business interests including the private sector

---

[†] Girvan, N., Bernal, R. and Hughes, W. (1980) *op. cit.*, p.118.

[††] Kincaid, G. R. (1980) *op. cit.*

[‡] The Times, London, 16 August, 1971.

organization of Jamaica, called for a greater role for free enterprise and a corresponding reduction in the role of the state sector in the economy.

The election which took place under a state of emergency on December 15, resulted in a decisive victory for the People's National Party led by the Prime Minister. The first task of the re-elected government was to tackle the foreign exchange crisis. In June 1976 Mr. Manley outlined a series of "austerity" measures including J$600 million ceiling on import spending for 1977, and the tightening of exchange controls. Other measures included an undertaking to nationalize the local operations of three foreign-owned banks.

As for the country's relations with the IMF the Prime Minister asserted that the government might seek an IMF loan to assist overcoming the immediate crisis, but the government would not accept devaluation as a condition for such a loan, because of the likely inflationary impact. Despite the country's economic crisis, some officials in the Manley government were determined not to call in the IMF, arguing that the Fund's policy prescriptions attached to the Fund's assistance would make it impossible to fulfill their promises to the people who elected them. The burden of the IMF conditionality which involves devaluation, relaxation of price controls and abolition of subsidies, falls primarily on the lower income group of the society. In its economic programme the governments priority was to raise the standard of living of this income group. The Fund's policy package and the government commitment to its people were in apparent conflict. In January 1977 Mr. Manley stated that:

> *"We are now facing a situation in which some of the people who could lend us money (the IMF and Foreign Banks) will apparently do so only on the condition that they should be able to tell us how to conduct our affairs ... this government, on behalf of our people, will not accept, anybody, anywhere in the World telling us what to do in our country. We are the masters in our house, and in our house there shall be no other master but ourselves. Above all, we are not for sale"*†.

The strong words by Mr. Manley could not by themselves solve the deepening economic crisis. The local private sector began to exert more pressure on the government threatening a virtual collapse of the manufacturing sector, with tens of thousands of workers being laid off if additional foreign exchange were not made available to finance imported raw materials. In fact the local private sector was fully aware that new commercial bank loans would only be available, if there was an IMF agreement. As the country's crisis deepened, Jamaica's bargaining position with the IMF weakened. The possibility of negotiations with the IMF became more tempting when the US Ford-Kissinger Administration was replaced by the Carter Administration. The new US government promised that US financial assistance to Jamaica (which had been practically terminated, 1974/76) would be forthcoming if the government of Jamaica entered into an agreement with the IMF. In August 1977 the government of Jamaica concluded a 2-year stand-by arrangement with the IMF.

The Appropriateness of IMF Diagnosis

The IMF mission to Jamaica ascribed the country's balance of payments

---

† Manley, M. (1978) Broadcast to the Nation, January 14th.

crisis to deterioration in export supply, as a result of declining export competitiveness and to excessive domestic consumption. These were said to be caused by: wage increases, excessive government expenditure, and excessive expansion in bank credit. These factors were held responsible for excessive domestic consumption which led to excessive imports, and for domestic inflation which undermined confidence in the Jamaican dollar and eroded the profitability of export supply. In examining the appropriateness of the Fund's diagnosis emphasis will be put on these two IMF claims. First the sources of domestic inflation in Jamaica will be examined.

Examining first the contribution of imported inflation to domestic inflation in Jamaica, Table VII.3 shows that in 1973 the import price index increased by 31%. This was partly due to the oil price increase, which took place towards the end of 1973 and partly due to the 16% devaluation of the Jamaican dollar in January 1973. After 1973 the Jamaican exchange rate remained fixed until April 1977, but the impact of the oil inflation continued during 1974 and 1975 causing import prices to rise by 49 and 12% respectively.

To quantifythe contribution of such import price increases to domestic inflation, which was running at an average rate of 13% during the period 1970-76, use can be made of our estimate in Chapter Three that a 1% increase in Jamaica's import prices would lead to a 0.49% increase in domestic prices in the short-run. This figure, if multiplied, by the annual increase in import prices gives an approximate estimate of the magnitude of imported inflation. These computations

(see Table VII.3) suggests that the contribution of rising import prices to domestic inflation in Jamaica, amounted to 79% in 1972, 50% in 1973 and 100% in 1974. During the period 1970-76, this contribution averaged about 71% of domestic inflation. But this, however, is the short-run impact of import price increases on domestic prices. The long-run impact includes the subsequent money wage adjustment, and their subsequent round effects on domestic prices. Jamaica has a highly unionized labour force, which negotiates wage settlements on the principle of cost of living adjustment being the minimum wage adjustment acceptable. There is, thus, a strong mechanism which ensures that large increases in the price of imported foodstuffs, and other consumer prices, trigger a secondary round of price increases as local costs of production are pushed up by rising wages .

In Chapter Three it has been estimated that a 1% change in domestic prices, would lead to 1.25% increase in money wages in the short-run. In the long-run the estimated increase is 1.87% for a 1% change in domestic prices. Multiplying these figures by column B (Table VII.3) gives an approximate estimate of the impact of imported inflation on money wages in the short and long-run, respectively. Column E, when compared with the actual increases in money wages, suggests that in all years, with the exception of 1976, the estimated increases in money wages (as a result of imported inflation) are smaller than the actual increases in money wages. The ratio of the latter to the former amounted to 53% in 1973, and 76% in 1975. Although these estimates are admittedly crude, they suggest that part of the actual increase in money wages, may be attributed to the wage-increase policy of the Manley government which

---

Bonnick, G. (1980) "The Experience of Jamaica in the Dell Report", The Balance of Payment Adjustment Process in Developing Countries, UNCTAD, MFD, TA15, Volume I.

Table VII.3: Estimates of the Contribution of Import Prices to Domestic Inflation (% Change)

Year	A Import Price Change	B	C	D	E	F Actual Change	G
		Contribution of Import Prices To:					
		Domestic Prices		Money Wages		Prices	Wages
		AX0.49	AX1.24	BX1.25	BX1.87		
1970	2.7	1.3	3.3	1.3	2.4	9.9	13.1
1971	19.1	9.4	23.7	9.4	17.6	4.6	21.7
1972	13.2	6.5	16.4	6.5	12.2	8.2	13.1
1973	31.4	14.2	38.9	14.2	26.6	28.9	50.4
1974	45.8	22.4	56.8	22.4	4.9	22.1	25.0
1975	11.7	5.7	14.5	5.7	10.7	11.4	14.1
1976	5.5	2.7	6.8	2.7	5.5	8.3	2.2

Source: Computations based on the results of Chapter Three. A, F and G are obtained from the Department of Statistics

was committed to raise the living-standards of the labour force.

During the period considered the government granted wage increases to teachers, followed by large wage increases in the mining and construction industries. This in addition to the government subsidization policy of imported foodstuffs[†] and other consumer goods caused the actual increase in money wages to exceed the increase in domestic prices leading to an increase in real wages amounting to 21% in April 1977 compared with their level in April in 1973 (see Table VII.4).

A crude estimate of the contribution of the government subsidization policy to the protection of the domestic cost of living, from the impact of import prices, can be obtained by comparing Column D (Table VII.3) with Column F. This comparison suggests that had it not been for the government subsidization policy, domestic prices would have been 10% and 30% higher than what they actually were in 1973 and 1974 respectively[††]. From this it might be argued that a large proportion of domestic inflation in Jamaica during the period 1970-1976 was due to import price increases which were then propagated by domestic wage adjustments. The government policies played a dual role; granting wage increases in excess of wage adjustments to imported inflation, and protecting the cost of living by its subsidization policies. The effect of these government actions would be reflected in its fiscal operations. This leads us to the IMF claim of excessive government deficits, and excessive money supply as sources of domestic inflation.

[†] These policies were reduced as a condition of the 1978 IMF Extended Arrangement.

[††] These crude estimates are based on the assumption that imported inflation is the only source of domestic inflation.

Table VII.4: Median Weekly Wage in Jamaica, 1973-1976

	1973		1974		1975		1976	
	April	October	April	October	April	October	April	October
Average (in J$)	11.9	12.6	16.9	19.8	22.6	22.8	24.8	26.4
Males	12.6	14.0	18.4	21.0	24.9	25.2	25.9	27.9
Females	10.7	10.3	14.6	17.9	19.0	19.1	23.2	25.3
Comsumer Price Index	95.0	109.5	122.4	135.4	145.1	155.5	161.1	169.3
Real Income								
Average	102.2	94.0	112.9	119.6	127.4	119.9	126.3	130.2
Males	99.7	96.2	112.7	116.6	128.9	121.7	130.9	124.0
Females	107.3	89.6	113.3	125.7	124.5	117.0	136.9	142.5

Source: Department of Statistics, Labour Office.

Over the five fiscal years (1972/73 to 1976/77) government expenditure grew at an average rate of 33% while government revenue grew at an average rate of 22%, causing the fiscal deficit to widen by an average of 11% per annum. During this period capital expenditure grew faster than current expenditure. The increase in current expenditure financed government social programmes, wage increases in the public sector, and debt servicing which in 1976/77 absorbed 21% of the total. A large part of the current expenditure also financed compensation payments paid out by the government, to enterprises taken over by the public sector. Revenues from personal income tax increased substantially, but corporate income tax revenues remained stagnant. The levy on bauxite introduced in 1974, together with increases in consumption duties, were not sufficient to contain the increased expenditure and in 1976/77 the fiscal deficit reached a record level of J$511 million. The deficit was increasingly financed by money creation by the Central Bank.

It can be seen from Table VII.6 (overleaf) that the rate of increase in money supply exceeded by far the rate of growth in the GDP. It would be, thereby, tempting to conclude that expansionary fiscal policies by increasing the money supply contributed to the propagation of domestic inflation. But both, domestic inflation and fiscal deficits, might be the result of developments in the external sector rather than the cause. As it was argued in the case of The Sudan, excessive fiscal deficits over the period 1973-1976 in the majority of non-oil developing countries, cannot be isolated from domestic inflation initiated by the 1973 oil price increase. Also, in the case of Jamaica, as the economy

Table VII.5: Fiscal Magnitudes in Jamaica, 1972/73-1976/77 (in millions J$)

	1972/73	1973/74	1974/75	1975/76	1976/77
Total Expenditure	359.7	443.1	750.6	940.0	1,164.9
Total Revenue	292.3	347.7	563.5	661.8	654.4
Deficit	66.8	95.4	187.1	278.2	510.5
Current Expenditure (%) Change)	25.2	29.4	45.0	24.5	23.4
Capital Expenditure (%) Change)	12.1	6.6	150.1	26.6	24.9
Financing					
External Borrowing	19.1	53.9	55.4	99.4	83.2
Domestic (non-bank)	41.4	27.4	76.8	77.6	114.5
Bank of Jamaica	11.9	38.4	32.9	93.0	271.5
Domestic Commercial Bank	-	20.3	32.9	93.0	271.5

Sourde: Bank of Jamaica Annual Reports

is centered around the mining sector, the link between developments in the mining sector; the overall performance of the economy; and their effects on government fiscal operations cannot be overlooked. The mining sector in Jamaica is not only an important source of government revenue, but also an important source of expansionary mechanisms in the economy. There are at least two main "multiplier" mechanisms generated by investment in the mining sector:

(a) As a source of foreign exchange it finances additional imports of capital goods for the activities of the local private sector and public enterprises ; it finances imports of raw materials and semi-finished goods needed for the operations of manufacturing, construction transportation and other services; it finances imports of consumer goods which generate additional commercial activity; and

(b) As a construction activity it provides a direct stimulus to the expansion of output in the local construction sector, provides additional demand for the output of local building materials; it also finances additional consumption expenditure by construction workers[†].

Given this leading role of the mining sector in the Jamaican economy, once foreign investment in the mining sector dried up, these multiplier mechanisms would work their way backwards, slowing down economic activity; reducing total output, and hence government revenues. Other sources of investment and foreign exchange provisions would not be able to contain such a downward trend, because they lack the all-embracing

---

[†] For this analysis see Girvan, Bernal and Hughes, (1980) *op. cit.*, pp.135-138.

Table VII.6: Percentage Changes in GDP, Consumer Prices and Money Supply, 1970-1974

Year	GDP		Consumer Prices	Domestic Credit	Money Supply (M_1)
	Current Prices	Constant Prices			
1970	18.0	12.1	7.7	21.2	14.4
1971	9.3	2.9	5.1	40.0	26.2
1972	12.4	10.0	8.2	36.4	7.8
1973	21.0	1.0	28.9	29.0	20.5
1974	25.0	-4.0	22.1	38.0	23.2
1975	20.3	-0.7	11.4	33.7	25.4
1976	4.0	-6.6	8.3	23.4	6.9
1977	10.0	-1.6	16.1	9.8	48.0
1978	26.0	-0.3	47.0	27.3	8.3
1979	13.0	-2.0	24.3	19.3	13.0

Source: IMF International Financial Statistics, Bank of Jamaica Annual Reports and Statistical Digest

effects of investments in the mining sector[†]. For example, public works by the government stimulate the construction sector, but do not by themselves provide foreign exchange inflows or increase export capacity, at least in the short-run.

It can be seen from Table VII.6 that during the period 1970-1973 real GDP grew at a high rate averaging 8.6%. In 1974 it dropped to -4.1% and income has been on a downward trend ever since. It would be difficult, however, to determine how much of the decline in the GDP was due to the drying up of foreign investments in the mining sector (see Table VII.7 overleaf), how much was due to the contraction of local private investments, and how much was due to the recessionary effects of the 1973 oil price increase. What is evident is that, the downward trend in real output was a major cause behind the sluggish growth in government revenue and the subsequent widening of the government deficit.

The major question is to what extent wage increases and government deficits contributed to the country's balance of payments crisis. The Fund pointed to the increase in the consumption/GDP ratio as an evidence of the excessive domestic consumption which pushed up imports. As is clear from Table VII.12 the consumption/GDP ratio increased by 12% from 82.4 in 1974 to 92.1 in 1976. But this was not due to increases in real consumption as consumption in real terms remained virtually

---

[†] For this analysis see Gurvan, Bernal and Hughes, (1980) *op. cit.*, pp.135-138.

Table VII.7: Capital Inflows, 1970-1976 (in million J$)

	1970	1971	1972	1973	1974	1975	1976	1977
Capital (net)	137.1	160.7	59.9	124.5	221.7	189.9	41.9	51.7
Direct Investment	135.4	146.8	21.2	20.2	20.6	-1.7	-0.5	-6.4
Private Long-Term	3.1	7.6	10.8	68.9	101.9	72.8	10.0	4.3
Private Short-Term	-2.3	2.3	9.2	2.1	16.1	6.4	37.6	59.2
Central Government	-1.3	4.0	18.7	33.3	81.9	112.4	72.0	-5.4

Source: Bank of Jamaica Annual Reports

unchanged, and actually deteriorated in 1975 (see Table VII.8). The increase in the ratio was entirely due to the deterioration in real GDP. Additionally, between the period 1972-1976, the volume of imports

Table VII.8: GDP, Consumption and Investment, 1974-1978 (Constant Price)

Index	1974	1975	1976	1977	1978
GDP	100	97.4	89.3	87.6	86.1
Consumption	100	99.5	99.8	98.2	92.3
Private	100	100.3	99.7	97.7	89.8
Government	100	96.1	99.9	100.5	102.6
Investment	100	103.6	71.9	49.5	49.9

Source: National Planning Agency

declined by about 8% per annum. Between 1972 and 1973, import volume dropped by 20%, then increased by 11% in 1975, and dropped again by 23% in 1976. From this it is clear that there is no evidence to support the IMF claim of excessive imports. What the IMF may have objected to was the tight import rationing and exchange control policies adopted by the Manley government over the period 1972-76. These policies had the effect of increasing the share of raw materials in total imports from 41% in 1972 to 56% in 1976, at the expense of consumption and capital goods imports.

The second IMF point relates the deterioration in export supply and its relation to wage increases to an "overvalued" exchange rate.

During the period 1972-1976 export volume deteriorated by an average of 3.7% per annum. This was the result of a 16% deterioration in 1975 followed by a 13% deterioration in 1976 (Table VII.9 overleaf). The deterioration in export volume cannot easily be ascribed to either excessive wage increases or to an overvalued exchange rate. The main export items are bauxite/aluminium, sugar and bananas, which together accounted for 83% of total exports in 1973. In 1974 the exports of bauxite/aluminium alone represented about 71% of the total. The deterioration in their export volume in 1975, and 1976 had more to do with power-play by the American parent companies, than with excessive wage increases or an overvalued exchange rate. Blaming the uncompetitiveness of Jamaican bauxite, the American parent companies shifted their demand to Guineain the case of bauxite, and to Australia in the case of aluminium. Before the introduction of the production levy Jamaica used to have a large cost advantage over its main competitors in the US market for both bauxite and aluminium. After the introduction of the bauxite levy, aluminium costs in Jamaica rose by about US$33 per ton which was said to be *almost* equal to the favourable advantage Jamaica had enjoyed because of its more favourable location, and lower transport and mining costs[†]. This suggests that Jamaican bauxite was marginally (or at least equally) competitive after the introduction of the production levy. As was noted before, it was Manley's plan to put bauxite resources and production under national control, and not the Jamaican costs of production that the American companies objected to. Wage increases in Jamaica took off from a very low base reaching an average of J$24.8 per week in April 1976 compared with a national minimum wage of J$20.

[†] IBRD Market Structure of Bauxite/Alumina/Aluminium and Prospects for Developing Countries. Commodity Paper No.24, March 1977.

Table VII.9: Indices of Price, Volume and Value for Exports and Imports, 1970, 1976 (1970=100)

Year	Imports			Exports		
	Price	Volume	Value	Price	Volume	Value
1970	100.0	100.0	100.0	100.0	100.0	100.0
1971	119.1	106.0	102.0	98.0	108.9	101.2
1972	117.6	116.8	11.20	102.0	108.0	107.4
1973	154.5	89.3	128.4	109.8	115.6	125.8
1974	225.2	89.8	207.5	193.0	123.1	239.2
1975	251.6	99.9	184.9	252.8	104.1	264.6
1976	341.7	76.7	193.6	246.7	89.9	211.5

Source: Department of Statistics

Additionally wage costsin Jamaica constitute a small proportion of total production costs. In 1977 the estimated wage cost in the total cost of selected manufacturing activites averaged 21%[†].
And in 1974 the foreign bauxite companies paid out J$ 144 million on account of the bauxite levy compared with J$ 55 million for local wages and salaries. In the same year the wage bill in the bauxite sector amounted to 12% of the declared value of bauxite and aluminium exports.

As for the exports of sugar and bananas they were marketed according to export contracts fixed with the US, Canada and theEEC, for contracted prices denominated in foreign currency. The only category of exports which can be said to be marketed according to the "free" world prices were the non-traditional agricultural and manufacturing exports. In addition to thefact that these exports constitute less than 20% of the total, the major cost element in them is not wages, but imported materials[††].

Examining Jamaica's payments account (Table VII.10), it is evident that a large part of the deficit was due to deterioration in the services account, which was mainly caused by capital flight in the form of investment income, and decline in receipts from tourism. Investment income outflows in 1976, were 100% larger than their level in 1973, and the crisis period (1975-76);the deficit in the services account amounted to half the deficit on the current account balance. Another important factor behind the deterioration in the payments balance

---

[†] Economic and Social Survey, Government of Jamaica, 1978.

[††] *Ibid.*

Table VII.10: Jamaica: Balance of Payments 1973-1979

(J$M)

	1973	1974	1975	1976	1977	1978	1979
A. Trade Balance	-161.2	-106.9	-144.8	-119.9	85.0	47.1	5.0
Exports	357.2	630.7	737.7	599.7	691.1	728.9	816.0
Imports	518.4	737.6	881.5	719.6	606.1	681.8	811.0
B. Services (net)	-27.1	-66.2	-136.0	-160.7	-134.6	-130.1	-247.0
Foreign Travel	90.4	88.6	69.3	42.6	85.2	124.0	152.7
Investment Income	-52.8	-61.5	-93.5	-105.1	-125.6	-168.8	270.9
Others	-64.7	-93.3	-111.8	-98.2	-94.2	-85.3	-128.9
C. Goods and Services (net)	-188.3	-173.1	-280.8	-280.6	-49.6	-83.0	-241.6
D. Unrequited Transfers (net)	24.0	21.3	23.8	5.4	18.2	23.4	69.0
Private	30.7	29.6	19.1	1.8	13.7	13.8	57.0
Official	-6.7	-8.3	4.7	3.6	4.5	9.6	12.0
Current Account Balance	-164.3	-151.8	-257.2	-275.2	-3.4	-59.6	-172.6
E. Net Capital Movements	124.7	221.1	189.9	41.5	51.7	8.9	35.4
Official	33.4	81.9	112.9	72.0	-5.4	162.6	64.7
Private	91.3	139.2	77.0	-28.1	57.1	153.7	-29.3
F. Total (A through E)	-39.6	69.3	-67.1	-231.3	20.3	-50.7	-137.2
G. Allocation[b]	-	-	-	-	-	-	9.1
H. Total (F + G)	-39.6	69.3	-67.1	-231.3	20.3	-50.7	-128.1
I. Change in Reserves[a]	27.7	-54.1	73.6	238.1	14.6	60.5	128.1

[a]Minus sign indicates increase, [b]Allocation of SDR's.

Source: Bank of Jamaica Annual Reports

was the "inflation effect", that is, the deterioration caused by initial trade imbalance as internationally traded goods prices accelerated following the 1973 oil price increases. Between 1970 and 1976 Jamaica's import prices increased by an average of 16.4%, while its export prices increased by an average of 20.4%, leading to an average improvement in the barter terms of about 4%. Yet as the value of imports, during the period considered, exceeded by far the value of exports, the positive effects of export price increases were significantly outweighed by the negative effects of import price increases. Bonnick (1980) decomposed the different factors affecting the payments deficit in Jamaica using the UN methodology of the Dell Report†. According to his estimates (see Table VII.11) import inflation, during the period 1972-76, emerged as the most significant factor behind the deterioration in the trade balance with a cumulative contribution of J$ 1249 million; of which J$ -686 million was due to non-oil import prices, and J$ -563 million was due to oil import prices. At the same time the cumulative contribution of export prices was positive amounting to J$ +442.0 million. This was far from sufficient to make up for the adverse effects of import prices, leaving a net adverse effect of J$ 807.1 million. His criteria also showed that factors affecting the supply of exports, comprising production and sales difficulties, were second in importance with a cumulative contribution of J$ 980 million.

To sum up, the preceding analysis shows that the major factors behind Jamaica's foreign exchange crisis were:

---

† Bonnick, G. (1980), *op. cit.*

Table VII.11: Jamaica: Decomposition of Factors Affecting Payments Account

The Contribution of:	(Cumulative in 1972-1976) (in J$ million)
Import Prices	-1249
Oil Prices	-563
Non-Oil	-685
Export Prices	+442
Factors Affecting Export Supply	-980
In Jamaica	-732
Abroad	-247

N.B. Minus sign indicates contribution which worsens the balance.

Source: Bonnick (1980) *op. cit.*

(a) The deterioration in export volumes;

(b) Capital Flight;

(c) Drying up of foreign private investment in the mining sector;

(d) Contraction of local private investment;

(e) Curtailment of commercial lending;

(f) Fall in receipts from tourism; and

(g) Import price inflation.

The factors (a)-(e), and perhaps (f) had more to do with politics than with excessive wages or excessive consumption. The root cause of the

crisis was the adoption by the Manley governemnt of a political line which was not popular to foreign interests and to the local private sector. There is little support for the IMF claim of excessive imports, and uncompetitive exports. The import volume actually declined during the six years prior to the crisis, and the deterioration in export volume had very little to do with domestic cost of production.

The Stand-By Arrangement, 1977

According to this 2-year stand-by arrangement the government of Jamaica was to receive U$ 75 million which amounted to 121% of its quota with the IMF, and hence reaching into upper credit tranches. The government of Jamaica received an initial payment of US $ 23 million (i.e. 30% of the total), while the remaining US $ 52 million was to be disbursed in instalments subject to the country's attainment of the IMF performance criteria. Each drawing under this arrangement was to be repaid within three years, and not five years which is the permitted maximum.

The programme objectives were said to

> *"stabilize the economy and bring the budget deficit into line with the projected real resources (i.e. without bank credit) and to attract foreign funds to allow a more gradual adjustment in the balance of payments than Jamaica was currently being forced to adopt"*[†].

The stated unquantifiable element in the performance criteria was that. Jamaica was required not to introduce multiple currency practices or

---

[†] Kincaid, G. R. (1980) *op. cit.*

intensify exchange and trade controls. Another programme elementwas the devaluation of the Jamaican dollar. Initially the Fund argued for a large overall devaluation, on the grounds that devaluation would improve the competitiveness of traditional and non-traditional exports against other sellers in target markets, as well as against production for consumption at home[†]. This initial proposal was rejected by the government, arguing that devaluation would provide little stimulation to the demand for exports, as bananas and sugar were marketed under inflexible negotiated agreements, but would reduce the foreign exchange equivalent required to cover the local costs of the foreign bauxite/aluminium companies[††]. However, a compromise was reached and a dual exchange rate which involved a partial devaluation was adopted as one of the programme elements. The dual exchange rate involved a basic rate (equivalent to the existing exchange rate) which was to be applied to government transactions; bauxite exports and essential imports including foodstuff and medicine. And a special rate (which involved a 38% devaluation) was introduced for non-traditional exports and all other imports. The unquantifiable elements in the programme provided that this dual exchange rate would be revised if the programme balance of payment target was not met.

The programme balance of payments target, involved a reduction in the current account deficit from 10.2% of GDP in 1976 to 4.3% at the end of the first year of the programme. At the same time government overall

---

[†] Bonnick, (1980) *op. cit.*, p.12.

[††] Sharpley, J. (1981) "Economic Management and The IMF in Jamaica: 1972-1980", DERAD Working Papers (the CHR: Michelsen Institute, Norway), September, p.32.

deficit was to be reduced from 18.9% of the GDP to 9.1% (see Table VII.12). To qualify for drawing the first instalment (which was made available three months following the conclusion of the agreement), the government of Jamaica had to satisfy the following

(a) All outstanding arrears in foreign payments were to be eliminated;

(b) No increase in the net domestic assets of the Bank of Jamaica and bank credit to the public sector; and

(c) Net foreign assets of the Bank of Jamaica were not to fall below J$ -138 million (See Table VII.13).

Clearly, the performance criteria required were out of proportion to the size of resources made available by the IMF. The Fund itself projected a current account deficit of J$ 137 million for 1977 and a minimum deficit of J$ 92 million for 1978 against US$ 82 million made available under the 2-year agreement. An IMF official who worked on Jamaica, appreciating this fact, asserted that the Fund's programme was wholly based on the "expected" foreign assistance which the programme would attract†.

To satisfy the IMF current target, with exports of bauxite falling and capital leaving the country, the government had to severely restrict imports or rely on the "expected" external assistance. With the Manley government, foreign assistance did not flow into the country following the IMF agreement. All the government loan-seeking missions were unsuccessful. Foreign financial assistance was virtually cut-off. Thus, imports were

---

† Kincaid, R. (1981) "Conditionality and the Use of Fund Resources: Jamaica", Finance and Development, Vol.18, No.2, June 1981, p.19.

Table VII.12: Selected Economic Indicators and Performance Criteria (1977-1979)

	1975	1976	1977 Actual	1977 Target	1978 Actual	1978 Target	1979 Actual[b]	1979 Target[c]
				(% of GDP)				
A. National Accounts								
Real GDP	-2.6	-8.3	-2.0	-	-1.7	1.0	4.0	3.0
Consumption[a]	84.0	92.1	92.5	-	88.3	80.0	76.8	76.6
Investment	22.4	16.9	11.9	-	12.2	18.0	19.3	14.9
B. Fiscal Operations								
Current Account	-0.4	-6.1	-5.7	0.5	-2.3	-0.4	3.2	-
Overall Banking System	-11.0	-18.9	-16.3	-9.1	-13.3	-11.0	-6.8	-8.9
Financing	4.3	1.0	2.6	7.7	3.5	3.4	-	1.7
C. Balance of Payments								
Current Account	-10.6	-10.2	-2.4	-4.3	-5.5	-4.8	-2.7	-5.3
Overall	-2.7	-8.4	-2.1	-	-2.8	-1.7	-0.4	-2.3
				(% change)				
D. Prices								
Consumer	17.4	9.8	11.1	-	35.0	32.0	-	30.6

[a] calculated from IMF Financial Statistics

[b,c] original targets and revised targets respectively

Source: IMF Survey December 15, 1980

reduced by 21% compared with their level in 1975. The current account deficit improved from a deficit of J$ 249 million to a deficit of J$ 35 million.

In December 1977, the IMF officials visited Jamaica to conduct their performance review, and their verdict was that

> *"the country made a significant departure and the performance criteria had been breached"*[†].

The significant departure which the Fund was referring to, was that Jamaica failed to satisfy the ceiling on net domestic assets of J$ 355 exceeding it by a very small amount of J$ 9 million or 2.6%, and failed to eliminate outstanding arrears. Accordingly the Fund cut-off its assistance to Jamaica, refusing the payment of US$ 15 due on the first instalment, and preventing the disbursement of the US$ 32 million loan package from Jamaica's commercial banking consortium which was made conditional upon the satisfaction of the IMF criteria.

The 2-year stand-by arrangement lasted for three months. The Manley government humiliated by the IMF began to lose credibility. The country was in acute need to borrow even larger amounts, and the IMF was in a strong position to impose even tougher conditionality.

The Extended Arrangement (1978-1980)

This time the IMF policy prescription clashed strongly with the objectives which the Manley government was set to achieve. For Jamaica to receive the terms of the extended arrangement the following conditions

---

[†] Kincaid, R. (1980) *op. cit.*

were imposed:

(a) Relaxation of price controls (the goods which were under price control since August 1970 were imported foodstuffs; domestically produced foodstuffs including beef, milk, sugar, poultry and coconut oil; goods produced by protected domestic industry; and rates charged by the public utilities);

(b) Restriction of annual money wage increases over the following two years to not more than 15% of an employer's existing wage bill;

(c) Abolition of the dual exchange rate introduced in 1977;

(d) An immediate devaluation of the Jamaican dollar to a new unified rate of J$ 1.55 per US$, which implied a 48% devaluation in the basic rate;

(e) An additional gradual monthly schedule of mini-devaluations where the exchange rate had to be devalued by a rate equal to the difference between the Jamaican rate of wage inflation and that of its main trading partners; and

(f) Additional taxes totalling J$ 180 million on a wide variety of foods and services.

The financial assistance conditional upon Jamaica's acceptance of the above policy package was a promise to receive the sum of J$ 260 million over the three years, subject to the satisfaction of IMF quarterly tests. The Fund also promised to assist Jamaica in seeking new loans from the World Bank and private commercial banks. With the consent of the IMF, the World Bank promised an extended loan of J$ 31 million and agreed to chair a meeting for "potential" donor countries.

The extended arrangement policy targets set by the Fund were more severe than for the stand-by arrangement. They included a reduction of fiscal deficits from 2.4% of GDP, to a surplus of 3.2% in the first year. In the second year, the deficit was targetedto swing to a surplus of 8% of GDP. The balance of payments target allowed for a deterioration in the current account from a deficit of 2.4% of the GDP to a deficit of 4.8% in the first year. In the second year it was targeted to a deficit of 2.7%.

On the monetary side, a ceiling on net bank credit to the public sector of J$1,110 million, allowing an increase of 20% by December 1979, compared with its level in June 1980. At the same time, total net domestic assets were allowed to grow by 18% (from a level of J$ 405.2 in June 1978, to a ceiling of J$ 480 by December 1979), and outstanding arrears were to be reduced by 50% (from J$ 79.2 million to J$ 40 million).

The Fund's policy prescriptions which concentrated on the devaluation and the mini-devaluations of the Jamaican dollar, together with the relaxation of price controls (which protected the basic food needs of the poorest consumers) at a time of 32% rate inflation, were not relevant to the circumstances. As far as the balance of payments was concerned, Jamaica's principle exports were not falling because they were uncompetitive. Since the Jamaican government announced its intentions in 1974, to participate in the production of bauxite, bauxite production fell at a rate of 15% a year. Moreover, the price of Jamaican bauxite was to a large extent determined by internal pricing

Table VII.13: IMF Performance Criteria and Out-Turn, 1977 Stand-by Arrangement

	1977 June 30	1977 Sept. 30	1978 Dec. 31	1978 March 31
	(US $ m)			
A. Net Foreign Assets				
Ceiling	-169	-162	-138	-138
Actual	-164		-227	-317
B. Outstanding Arrears				
Ceiling		50	0	0
Actual	33		27	82
	(J $ m)			
C. Net Domestic Assets				
Ceiling		345	355	345
Actual	34		364	403
D. Net Bank Credit to Public Sector				
Ceiling		745	745	735
Actual	37		n/a[a]	841
E. Foreign Borrowing Authorization (US $ m)				
1-5 years:				
Ceiling				75
Actual				-
1-15 years:				
Ceiling				160
Actual				-

Source: IMF Stand-By Arrangement with Jamaica

[a]Not available when the IMF conducted its test.

policies, between American companies and their Jamaican subsidiaries. The devaluation of the Jamaican dollar benefited only the American Aluminium companies which were now able to purchase cheaper Jamaican bauxite. This more than conpensated for their loss of revenues caused by the 1974 imposition of the 7.5% bauxite tax on their Jamaican subsidiaries.

On the other hand, imports which were under the control of the government licensing system reached a minimum level which could not be reduced without affecting economic activity, and the basic food imports of the population. When Jamaica achieved a 17% cut in imports to satisfy the 1977 balance of payments target, the experts of the IMF criticized this move saying that

> *"the diminished flow of imported materials contributed to a further decline in economic activity"*[†].

More paradoxical was that, after imposing devaluation which makes imports more expensive, the IMF officials stated that:

> *"Jamaica cannot overcome its difficulties, unless imports are greater"*[††],

and that

> *"the projected external resources would not have been sufficient to allow an increased imports consistent with the economic growth objectives of the programmes, therefore Jamaica with the Fund support, sought to mobilize additional external Finance"* [‡].

The loans which Jamaica received were fully absorbed by the increased import bill. During the first year of the extended arrangement, total imports increased by US$ 308.3 million while Jamaica received the

---

[†] Kincaid, R. (1980) *op. cit.*

[††] *Ibid.*

[‡] *Ibid.*

sum of US$ 111 million from the IMF, and a promise of US$ 31 million from the World Bank.

Despite the agreement with the IMF, capital flight continued. In the first year of the agreement, invisible expenditure including loan repayments and investment income, increased by more than 240%, from US$ 118 million to US$ 360 million. The increase in investment income outflows (profits on direct investment and interest on international loans) amounted to J$ 109 million, which was almost as large as the amount of money made available by the IMF.

During the first year the Government carried out every single element in the programme. All IMF quarterly tests were passed. Bank credit to the government was kept below its ceiling; outstanding arrears were reduced to US$ 30 million against a maximum ceiling of J$ 40 million, and total domestic assets were kept at US$ 425 million compared with a ceiling of US$ 480 million (see Table VII.14). Yet, the relaxation of price controls coupled with the devaluation-induced inflationary impact, on top of the prevailing inflation rate, resulted in a more than 35% fall in real wages. This in turn adversely affected economic activity through growing disputes between labour and government, social unrest, and strikes. Production continued to decline, investment activity remained weak despite the IMF attempts to reduce wages and increase profits, and the real GDP declined by 2.7% against the IMF projection of 1% increase. The balance of payment on current account deteriorated from a deficit of 2.4% of GDP to a deficit of 5.5%.

It is no wonder that when the IMF mission visited Jamaica at the end of the first year of the extended arrangement, they found that their programme was adversely affecting the Jamaican economy. According to their own assessment the cause of the poor economic performance was the:

Table VII.14: IMF Monetary Ceilings and Out-Turn, Extended Arrangement (1978-1980)

	1977 Dec.	1978 June 30	1978 Sept. 30	1979 Dec. 31	1979 Mar. 31
	(US $ M)				
A. Net Foreign Assets					
Ceiling		-335.0	-300.0	-300.0	-280.0
Actual	-227	-318.3	-279.0	-289.5	-258.2
B. Outstanding Arrears					
Ceiling		80.0	60.0	-40.0	20.0
Actual	27	79.2	48.8	30.4	18.9
C. Net Domestic Assets					
Ceiling		440.0	445.0	480.0	473.0
Actual	403	405.2	393.6	424.6	413.1
D. Net Bank Credit					
Ceiling		930.0	1010.0	1110.0	1041.0
Actual	841	856.8	887.0	1021.5	992.9

Source: Bank of Jamaica, Balance of Payment of Jamaica 1978-79

> *"limited availaibility of imported raw materials in spite of an expansion in imports that produced a widening in the current account deficit"* †.

In fact, imports did not expand in volume, but rather in value, because of the devaluation of the Jamaican dollar. During the first year of the programme Jamaica paid 65% more, for 5.3% less imports. Although both the fiscal deficit, and the current account deficit deviated from the IMF targets, the Fund, this time, did not interrupt Jamaica's drawing right under the Extended Arrangement. Rather, they revised their next year's target allowing for

> *"A greater current account deficit of the balance of payments so as to permit a further expansion in imports and promote economic growth"* ††.

The increased imports were to be financed by the US$ 31 million loan from the World Bank to

> *"aid manufacturers in importing essential items through a revolving export development fund"* ‡.

Thus while the Fund was imposing devaluation, a credit squeeze and other deflationary policies, which through increased cost of imported materials lack of operational funds, and lack of demand for their products, threatened the survival of domestically-owned import-substitute industries, and encouraged more imports and assisted the country in seeking loans to finance them.

In revising the programme for the second year it was asserted that there would be no need for further devaluation; as Jamaica's internatioanl competitiveness had been fully restored. However, it was argued that

---

† Kincaid, R. (1980) *op. cit.*

†† *Ibid.*

‡ *Ibid.*

although the profitability of the private sector had increased as wages were reduced, the private sector was still not playing the leading role. The lion's share of bank credit went to the public sector. Trade unions, and work stoppages, were also partly to blame for the poor economic performance. The government was thus made to sign a *"a social contract"* with the private sector and the trade unions[†]. The revised IMF package reflected the contents of the *"social contract"*:

(a) The government was to reduce its real budget, so as to release more credit for the private sector;

(b) The private sector promised to re-invest profits so as to promote growth and create jobs;

(c) Trade unions would undertake to minimize industrial disputes;

(d) Wage increases and price increase were to be kept to 10%: and

(e) The government would work to promote trust and confidence with the private sector.

The Fund, in return, promised an increase in its assistance to a total amount of US$ 419 million compared with an initial amount of US$ 240 million. The Fund also promised to induce foreign commercial banks to support the revised programme. In the first two months of the programme the Fund undertook to make US$ 80 million available to *"clear up international payment arrears and stimulate imports"*[††]. However, the performance of the Jamaican economy was even worse than

---

[†] Manley, M. (1979) "The Social Contract" Broadcast to the Nation April 25.

[††] Kincaid, (1980), *op. cit.*

before. The rate of inflation continued to rise - a fact which resulted in more social unrest, and work stoppages in railroad services; electricity, the bauxite industry, and even in the Central Bank activities. The balance of payments on current account deteriorated to -6.8% of GDP and international payments arrears more than doubled. Visiting Jamaica in December 1979 the Fund interrupted Jamaica's drawing rights under the Extended Arrangement (of which only 40 of the approved amount had been disbursed) on the grounds that there had been departures from programme targets. Here, the Fund was referring to the ceiling on international reserves which Jamaica exceeded by US$ 117 million. An analysis of the Bank of Jamaica has shown that at least J$ 102 million of this breach was caused by factors beyond Jamaica's own control (see Table VII.15) This included a US$ 33 million increase in the oil bill, US $ 18 million due to the increase in import prices, and US $ 20 million due to export production destroyed by flood rains.

Following the suspension of the IMF assistance, the Fund indicated that the condition for a waiver would include, major reorganization of the structure of government administration; the cutback and rationalization of public enterprises; and massive cuts in government expenditure. In the event, all the members of the Manley government resigned at the request of the Prime Minister who stated that:

> *"Measures to rectify Jamaica's present problems including the acute shortage of foreign exchange and a serious gap in financing the budget, must include the restructuring of the government and the overhaul of the entire administrative system"*[†].

[†] Manley, M. (1980) "The Need for a New Economic Path", Broadcast to the Nation, February 3.

Table VII.15: Factors Responsible for Foreign Exchange Shortfall That Led To The Breach of the IMF Ceiling on Net International Reserves

Factors	U.S. $ Million	% of total Shortfall
A. External	88	52.2
increases in oil bill	33	21.0
increases in debt payments	31	19.7
increases in import prices	18	11.5
B. Unanticipated Internal Factors		
export production destroyed by flood rains	20	12.2
C. 1978 Import Payments Overhang	30	19.1
D. Unavailability of Funds from the Export Development Fund	25	15.9
E. Errors in Estimation	55	35.0
F. Total	157	100.0

Source: Bank of Jamaica, cited by Cirvan *et al.* (1980) *op. cit.*

Shortly after the government reorganization, Mr. Bell, the Minister of Finance, asserted that Jamaica would not be able to meet all the conditions put by the IMF. He noted that the country's reserves would fall short of liabilities by US $ 500 million and he attributed this, among other factors to:

(a) Higher than projected foreign debts, due mainly to increases in interest rate;

(b) Higher import costs caused by International inflation; and

(c) Delays in the disbursement of the World Bank US $ 31 million loan to finance imports.

The Minister was clearly trying to avoid criticizing the Fund. He soon had to visit the IMF, together with Mr. Manley to negotiate the terms of a waiver which would permit further drawing from the Fund. Before this visit, the Manley government concluded an agreement with the American companies providing for a reduction in the levy on bauxite production. Although there is no evidence to support the idea that this move was linked to their coming talks in Washington, yet the timing of the agreement indicates the softer approach they would tend to adopt.

In Washington, it was made clear to the Jamaican side, that a reduction of J $ 150 million in the government capital expenditure in the 1980/81 budget would be a precondition for the disbursement of US $ 29.9 million Fund assistance. Mr. Manley argued that the social impact of a reduction of this magnitude was unacceptable and that:

> *"It was not possible, or advisable through cuts, new taxes or by whatever means to reduce the deficit by more than J $ 100 millions the additional reduction of J $ 50 million demanded by the IMF would necessitate the laying-off of nearly 11,000 public employees causing a social and administrative disaster"*[†].

[†] Manley, M. (1980) "Towards a Self-Reliant Economy: The Non-IMF Path", Statement in the Parliament, March 25.

Despite the government's arguments the IMF insisted on the J $ 50 million additional reduction in public expenditure, making such reductions subject to quarterly tests which the Finance Minister considered could not be met[†]. The negotiations broke down and in March 1980 the Manley government decided to suspend further talks with the IMF.

The government of Mr. Manley spent three years learning the fact that a socio-economic programme aimed at increasing the government's role in the economy, and redistributing national resources towards greater social justice cannot be implemented while borrowing from the IMF. The Fund's programmes which are typically aimed at increasing the profitability and the role of the private sector, had the effect of strengthening the position of the upper income groups in Jamaica: the very social force which traditionally had resisted any attempts at social reforms. The sharp decline in living standards and the failure of the promised economic and social reform disillusioned Manley's supporters, turning them into hostile opponents. This was directly reflected in the outcome of the general elections, which followed the decision of the Manley government to suspend talks with the IMF.

The government's immediate task was to negotiate the rescheduling of its US $ 338 million debt repayments of which $ 170 million was due in the following twelve months. The government had also to secure foreign exchange sufficient to purchase basic imports. The foreign exchange shortage became even more acute when the Manley government failed to obtain a US $ 32 million loan expected from the US and the UK.

[†] During the period of the IMF management of the Jamaican economy, 78 factories closed down adding 5,250 workers to the total unemployment. When Mr. Manley was holding the above talks with the IMF, about 299,999 were already unemployed out of a total labour force of 900,000 i.e., about 33% unemployment. See Financial Times, London, 17, 8, 1980.

The first move in this direction was a visit to Washington and New York by Mr. Small - the new Finance Minister† - in early April 1980 to hold talks with the Royal Bank of Canada and the Bank of Nova Scotia, seeking the rescheduling of their debts and an emergency loan to finance the country's basic need of imports. His mission was unsuccessful and he described the banks attitude as *"very political"* and strongly influenced by the recent Jamaican opinion polls forecasting a victory forthe JLP Opposition Party (and thus the prospect of an early resumption of negotiations with the IMF).

Later in April Jamaica's bank creditors averted an early default on the country's debt service repayments by accepting to apply, on a month-by-month basis, rescheduling arrangements, concluded in March 1979, which had previously been conditional on theexistence of an agreement between Jamaica and the IMF. This more typifies the lending strategy of private commercial banks and some donor countries, which aims at striking the right balance between pressurizing the debtor country to ensure its "obedient" behaviour, and preventing the lending system from breaking down by excessive pressure, resulting inthe debtor country defaulting entirely. In the case of Jamaica, the bank creditors refused the government rescheduling proposal so as to put pressure on the government to accept the IMF conditions. Yet, when the Jamaican government broke away from the IMF and the possibility of default on the country's debt repayment became certain, they averted this by accepting the rescheduling proposal.

---

† On March, 24, ,980, Mr. Bell the Minister of Finance resigned after the failure of the negotiations with the IMF.

The country's elections were to be held in October 1980. The opposition Conservative Party (JLP) election manifesto made no direct reference to the IMF, but it contained an economic programme based entirely on IMF-styled prescriptions. Not only that but Mr. Seaga the leader of the JLP visited Washington to meet Mr. Walter Robichek (a senior IMF official who had been closely involved in the earlier official negotiations) seeking the IMF approval of the Party's economic programme[†]. Mr. Robichek had also supplied Mr. Seaga with information concerning the country's current payments position, which was published in the JLP Election Manifesto. Legally, and formally, the Fund has no power to dictate changes in the country's internal economic policies. In this case the Fund's violation of its principles went to the extent of approving the opposition Party's economic plans and supplying it with information aimed at influencing election results.

The result of the election was a heavy defeat for Mr. Manley's party (PNP) and a large victory for Mr. Seaga's (JLP) conservative party. In the election the people of Jamaica were literally asked to choose between two radically different approaches to future economic policies. One which sprang from the bitter experience with the IMF, called for pulling Jamaica out of the debt trap along a path to economic self reliance (which was represented by the PNP) and another which advocated the IMF policies and its principle of relieving debts by increasing them (which was represented by the JLP). The irony was that

---

[†] This had led the Finance Minister, Mr. Small, to send a letter of protest to the Fund's Managing Director, stating that the Jamaican government *"does not concede the right of the Fund to interfere in the political life of its members"*. The Fund responded to this by sending a formal apology to the government of Jamaica.

the factors which were reported to be of greater electoral significance and which led to the JLP victory were the 33% unemployment, and the 40% rate of inflation both of which were exacerbated by the IMF prescriptions.

The Jamaican experience under the Manley government provides a classic Third World case, of how the aid-debt-dependence weapon is used, to economically strangulate poor countries that attempt to possess real control over their national wealth and national resources, and to break away from the very same aid-debt-dependence cycle. The Manley experience with the IMF was beyond doubt a case where the IMF tighened its conditionality aimed at creating economic and social disasters sufficient enough to make the government unpopular, and to bring about a change in government in accordance with the United States' economic and political interests. A casual comparison between the IMF treatment of the Sudanese government and the Manley's government supports this point.

The first visit of the newly elected Prime Minister Mr. Seaga was to the US. The emphasis of the Seaga-Reagan talks was on the promotion of private US investment in Jamaica, and the necessary change in Jamaica's investment laws to facilitate such a promotion. During the first months of its office the Seaga government received many short-term credit which included US $ 40 million from the US government, a US $ 40 million credit from American commercial banks, and US $ 23 million from Venezuela under the Mexican-Venezuela Oil Facility. As for long-term borrowing the Inter-American Development Bank announced a US $ 23.5 million loan for oil exploration and in January1981 the British Government announced a

£6 million loan, much of which was already committed to cover purchase of urgently needed imports from Britain.

The Jamaican experience with the IMF during the Manley government is further evidence for the Payer hypothesis that, where the most powerful opposition to the government in power is *"rightist"* and friendly to the US, the government is likely to receive a more severe treatment (in terms of conditionality and performance criteria) from the IMF, than a country where the chief rival to governments power is *"leftist"* and unfriendly to the US.

CHAPTER EIGHT

CONDITIONALITY: THE EXPERIENCE OF ZAIRE

Background: Zaire From Independence to the 1976 Economic Crisis

Zaire, formerly the Belgium Congo is one of the most resource-rich countries of Africa; containing deposits of copper, cobalt, manganese, diamonds, tin, petroleum, and gold. In the early Twentieth Century the Belgian Colonial Rule directed all economic effort towards the exploitation of these huge deposits. Legislation was introduced to enforce low prices of agricultural produce which allowed wages in the mining sector to be kept down. Cheap labour was provided by compulsory recruitment of workers into mines and plantations. Capital investment which was controlled by four holding companies, was aimed at the production and exportation of minerals[†]. Up to the late 1950's the Congolese were not allowed to own property and were denied access to finance and bank credit. Peasants and workers were condemned to backwardness and poverty. This state of affairs created a strong anti-colonial movement and towards the end of the 1950's the colonial grip began to loosen[††].

[†] These were Banque de Bruxelles (16 companies), Groupe Empain (5 companies) Societe Generale (41 companies) and Groupe Cominiere (9 companies).

[††] For the Colonial history of the Congo see Anstey, R. (1966) King Leopolds Legacy, the Congo Under Belgian Rule, 1908-1960, Oxford University Press. See *Ibid.*, p.113 for the activities of foreign companies in Zaire.

The Belgian Colonial Administration planned to hand over power to a national administration which could protect its interests in the mineral-rich Katanga province. In July 1960, only eight days after the country's formal independence, Belgian troops invaded the Congo in the guise of protecting European lives, to crush a social uprising which threatened their investments in Katanga. This invasion was followed by many dramatic events, the proclamation of independence of the Katanga province, the assassination of Lumumba (the country's Prime Minister), and the intervention of United Nations Forces. The United Nations Forces remained in the country until 1964 to supervise the integration of Katanga into the Republic of the Congo. In 1965, Mobutu, the Chief of Staff seized power in a coup establishing military rule which has lasted to the present day.

The economy of the Congo was reduced to ruins during those five years (1960-65). National output fell by 25%, while the share of agriculture in the GDP dropped from 40% in 1958 to 25% in 1966 . Copper production, however, remained unaffected. Between 1960 and 1965 the production of refined copper increased by 10,000 metric tons .

The relative political stability which followed the military coup together with the growth of the developed industrial countries which created a growing demand for Congolese minerals, led to the expansion of the country's economy. Economic expansion was facilitated by huge government-supported private foreign direct investment in the mineral and manufacturing sectors. In 1967 total production of foreign-owned companies accounted for about 73% of the country's Gross National Product. In that year about 41% of foreign investment was channelled

---

† World Copper Statistics Since 1950, World Bureau of Metal Statistics 1977.

into the profitable processing sector that grew as a complement to the mineral extraction industry.

The structure of the country's economy was not changed; it simply expanded on the pattern laid down by the colonial administration as a supplier of raw materials to the industrial West. The mineral industry, and in particular copper, remained as the major foreign exchange earner, and a major source of government revenue. Copper also remained vital to the Belgian economy, as was the case before independence.

In 1967 the Congolese government nationalized Union Miniere de Haut Katanga (UM), the leading Belgian mining company, transferring its assets to the state-owned Gecamines. However, the nationalization decision proved to be not a change in ownership, but rather a change in the company's name, for the management of production and marketing was entrusted to US subsidiary - the Societe Generale des Minieres (SGM). This, on top of the control over financing, secured the dominant Belgian position. Additionally the nationalization agreement guaranteed SGM 6% of the value of metal sold until 1982 and 1% subsequently. Thus, power remained in the hands of the Belgian company while Gecamines continued to shoulder the full costs.

In 1970 the government introduced an Africanization programme. This began by a change in the country's name from the Congo to Zaire. Like the 1967 nationalization, the Africanization campaign (which lasted until 1972) was limited to altering foreign-sounding names to African names. The Katanga province was thus called Shaba (the Swahili word for copper).

In November 1973, President Mobutu declared (before his National Assembly) that, by 1980 Zaire, would exercise complete control over the copper industry, with 100% of Zaire's copper to be refined inside the

country; that all subsidiaries of the former UM would be nationalized together with the Non-Zairese section of the diamond industry, and that all plantations and farms would be Zaire's property. The decision on refining copper in Zaire meant that no part of Zaire's raw copper would continue to be refined by the SGM Belgian company, while until 1973 55% of the copper processed in Belgium was supplied by Zaire. Yet, the strong words of President Mobutu were not put into action. In 1974 the nationalization decision was partially implemented. This brought about immediate foreign retaliation in the form of capital flight, and the drying up of capital inflows. This situation was further aggravated by the 1973 oil-inflation, and the consequent recession in Western industrial countries, which reduced the demand for copper causing a large drop in its price. This resulted in an unprecendented deficit in the country's overall balance of payments amounting to Zaires 57 million in 1975†. In the same year the IMF intervened and under its influence the nationalization decision was reversed. Since then, until the present day (early 1983), Zaire's economic affairs have been conducted largely under the auspices of the IMF.

Explaining Zaire's Economic Crisis

In explaining the economic crisis of Zaire, the discussion will be centred around the factors which lie at the root of the country's economic problems, as well as the immediate factors which led to the 1975 foreign exchange crisis. Among the long-standing problems which contributed to Zaire's economic collapse were:

---

† The national currency of Zaire is called the "Zaire". In 1975 Zaire 1= US$2.00.

(a) the underinvoicing of export proceeds by foreign mercantile groups and the Zairian politico-commercial groups[†];

(b) the overpricing of materials by subsidiaries in Zaire from their parent companies;

(c) large scale smuggling of diamonds;

(d) the government agricultural pricing policies;

(e) massive payments for invisible transactions; and

(f) the government foreign borrowing policy.

(A) Under Invoicing of Export Proceeds

The under invoicing of export proceeds takes the form of diverse fraudulent export transactions, such as under-grading of quality, fictitiously back-dated delivery contracts and under-priced export contracts. These forms of fraudulent trading were carried out by firms in which were involved a number of highly ranked members of President Mobutu's sole ruling party (Movement Populaire de la Revolution) and some foreign firms[††]. Although such fraudulent trading was believed to be practiced in almost all export transactions, it is extremely difficult to quantify the foreign exchange lost in this way[‡]. However, the 1976-77 "coffee affair" may shed some light on the size and the cost of this problem.

[†] The politico-commercial group refers to highly ranked members of the sole ruling party, the Presidential Family and the Presidential Clan.

[††] See Gould, D. (1977) "Disorganization Theory and Underdevelopment Administration: Local Organization in the Framework of Zairian National Development", Annual Meetings, (African States Association, Houston).

[‡] The 1976-77 IMF Mission to Zaire identified under invoicing as one of the causes of the short-fall in export proceeds. This was reported in "Zaire: Use of the Fund Resources - Compensatory Financing Facility".

A severe world coffee shortage became apparent in the second half of 1975 when Brazilian production was affected by a drastic frost. This drove the New York green coffee price, from US$0.60 per pound, to 3 dollars by 1976. Given Zaire's coffee shipments in that year which amounted to 100,000 metric tons, the foreign exchange earnings from coffee should have amounted to about US$273 million . Yet the Bank of Zaire records of foreign exchange earnings from coffee shows a figure of US$80.7 million. The difference, which amounted to US$192 million, represented the country's loss of foreign exchange as a result of underinvoicing.

(b) Overpricing of Imported Materials

The overpricing of imported materials is a feature of a country like Zaire where a large proportion of the country's GDP is produced by foreign firms. In most cases the imports needed for the operations of foreign companies takes the form of exchanges in money and materials between two branches of the same multinational company. Domestic subsidiaries of foreign companies are often said to pay artificially high prices for the materials they import from their parent companies. This overpricing practice is used by foreign companies as a mechanism of profit remission, and, at the same time it allows them to significantly underdeclare their profitability . Unfortunately, there

are no available estimates for the degree of overpricing of foreign firms in Zaire. However, given the sheer size of foreign investment in Zaire, the overpricing problem may be considered as a major cause of balance of payments difficulties.

(c) Diamond Smuggling

A third malpractice which weakens Zaire's economic base is diamond smuggling. In 1971 the authorities expelled about 5,000 foreign subjects that were involved in diamond smuggling which was said to have lost the government 25% of its annual revenue from diamonds†. In recent years this practice has been on the increase reflecting itself as a large drop in officially reported production. Diamond output which was 13.5 million carats in 1974, was apparently only 8.0 in 1980 ††.

However, all fraudulent activities are nothing but the symptoms of what President Mobutu called the *"Zairian Sickness"*, without reference to which any study of Zaire's economic crisis would be incomplete. Describing the Zairian sickness in his address to the MPR party Congress in November 1977, President Mobutu stated"

> *To sum it up everything is for sale, everything is bought in our country ... any slice of public power constitues a veritable exchange instrument convertible into illicit acquisition of money, or other goods, or the evasion of all sorts of obligations ... Thus on audience with an official, enrolling children in school, obtaining school certificate, access to medical care, a seat on the plane, an import licence, a*

---

† A cogent analysis of the cocoon of corruption and the involvement of the presidential family and top officials in self-enrichment is provided by Ryneman, J. (1977) "Comment le regime Mobutu a sape propres fondements", Le Monde Diplomatique, May.

†† To the point, July 7, 1978, cited by Young, C. (1978) *op. cit.*, p.173.

diploma, among all other things, are all subject to this tax (bribe), which is invisible yet known to the whole World".

As example of this invisible tax is cited in a recenty study which shows that the Shaba Regional Commissioner was earning US $100,000 per month in 1975 of which only $2,000 was his nominal salary[†]. Such a self-enrichment attitude by top political officials is not surprising in a country where the President and his "presidential family" set the example . A recent South African publication estimated Mobutu's property holdings in Belgium, Switzerland, and elsewhere at US$25 million and cash holdings in Swiss banks at about US$70 million, excluding his holding company in Zaire which employs 25,000 workers .

(d) The Government Agricultural Pricing and Tax Policies

As noted earlier the colonial agricultural price policy in Zaire was geared towards enforcing low prices of agricultural produce, to keep wages at low levels, thereby ensuring the supply of cheap labour to the mining industry. After independence the strong foreign domination over the mining industry dictated the continuation of the same pricing policy. The government of Zaire continued to fix low prices for agricultural products. This low pricing policy was enforced by law, and supervised by army units. Rural roadblocks were erected by the army during harvesting seasons, to prevent peasants from disposing of their stocks at higher free market prices. Also, some politico-

[†] Gloud, C. D. (1979)

commercial groups have forced villagers to accept prices well below the official prices, or simply confiscated their produce.

Table VIII.1: Index of Agricultural Government-Fixed Prices (June 1967=100)

Crop	1960	1970	1974	% Change 1974/1960
Maize, Shaba, Kasai	114.9	100.7	96.0	-16
Manoic, Western Zone	126.4	75.6	36.0	-71
Rice Paddy	157.9	109.2	104.0	-30
Beans	137.9	90.7	43.2	-34
Cotton (1st quality)	172.4	85.0	67.5	-69
Palm Oil (all except Bas Zaire	241.4	79.3	64.8	-73
Robusta Coffee Bandundu	195.4	90.7	64.4	-67
Aribica Coffee	202.0	93.9	52.0	-74

Source: Gran, G. (1976) "Policy Making and Historic Process: Zaire Permanent Development Crisis", Annual Meeting (African Studies Association Boston) November.

The Government's agricultural tax policy constituted an additional burden on Zaire's farmers. The legal levies of local authorities ranged between 15 to 20% of crop cash revenues. This, plus the "invisible tax" on top of the government-fixed low prices has been estimated to cost the poor farmers at least 50% of their potential revenue[†]. An illustration

[†] Young (1978) *op. cit.*, p.175.

of the fiscal impact of the state and the effect of the invisible tax on the farmer's revenue is provided by the distribution of the benefits from the "coffee affair" where all the benefits from the coffee price increase were diverted to the politico-commercial group and to the government in the form of higher tax revenues, while the price increase received by the farmer was less than the inflation rate[†].

The government agricultural price and tax policies which were inherited from the colonial administration, had a devastating effect on the agricultural sector. The production of most crops in the 1970's were well below their 1959 levels. The share of agriculture in the GDP fell from 18% in the late 1950's to about 9% in 1975. The country which was self-sufficient in agricultural produce has run up a food import bill of US$300 million in 1979[††]. This is alone accounted for 33% of the country's foreign exchange expenditure. Cotton which was one of the pre-independence export items, is no longer produced in sufficient quantities to adequately meet the needs for the home market.

The failure of the agricultural policy to provide sufficient food at low prices to feed the low-paid army of mining workers, and the consequent reliance on high-priced imported foodstuffs forced the government into a policy of reducing real wages in the mining industry, by awarding wage increases less than the inflation rate. Between June 1960 and March 1976, mining real wages fell by 75% (Table VIII.2 overleaf.)

[†] Young (1978), *op. cit.*, p.175.

[††] African Research Bulletin, 15, Jan. 14 February. 1977 p.4989.

Table VIII.2: Zaire: Wage and Price Indices, 1960-1976. Kinshasa, at official minimum wage, (1960=100)

Date	Wage Index	Price Index	Real Wages	% Change in Real Wages
June 1, 1960	100	100.0	100	-
May 1, 1964	383	575.9	67	-33
October 1, 1971	960	1,486.2	64	-4
September 5, 1976	1,274	3,099.5	41	-35
March 27, 1976	1,530	5,888.1	25	-40

Source: Union Nationale des Traveaillerus Zairois "Position Concernment la Politique des Salaires", cited in J. Ryneman (1977) *op. cit.*

The policy was enforced by the maintenance of high unemployment. This was made possible by the growing degree of capital intensity of foreign direct investment in the mining industry. Increasing investments created fewer and fewer job opportunities. Between 1969 and 1973 investment worth Zaires 473 million provided employment for less than 19,000 workers. While between 1959 and 1971 permanent employment as a percentage of the workforce fell from 11% to 8% (Table VIII.3 overleaf).

Table VIII.3: The Workforce and Employment in Zaire (in Thousands)

	1959	1968	1972
(A) Population over 15 years	7,650	9,280	11,500
(B) Permanent wage employment	830	710	905
of which:			
in the private sector	663	500	680
in the public sector	167	210	225
(B) as a percentage of (A)	11	9	8

Source: Rapport Banque du Zaire, 1972-73, p.193.

(e) Massive Payments for Invisible Transactions

Another factor which has contributed to the weakening of Zaire's economy is the huge payments which the country makes for its external invisible transactions. Between 1970 and 1975 the ratio of invisible payments to the value of total export earnings averaged 42%, and in 1975 the deficit in Zaires invisible balance (invisible receipts minus invisible payments) amounted to 66% of the country's export earnings. A casual comparison between the country's trade balance and its balance on current account will reveal the size of the adverse effects which invisible payments have on the country's external position (Table VIII.4).

Table VIII.4: Zaire: Trade Balance and Balance on Current Account, 1970-1975 (in million of Zaires)

	1970	1971	1972	1973	1974	1975
Merchandise Exports	399.8	375.9	345.2	525.2	773.8	416
Merchandise Imports	-291.6	-369.0	-376.1	-494.3	-732.4	-478.7
Trade Balance	(108.2)	(6.9)	(-30.9)	(30.9)	(41.4)	(-62.7)
Invisible Receipts	20.7	32.4	40.0	46.9	85.9	77.8
Invisible Payments	-140.1	-236.8	-190.8	-246.0	-284.8	-350.5
Invisible Balance	-119.4	-204.4	-150.8	-199.1	-198.9	-272.7
Balance on Goods Services and Income	(-11.2)	(-197.5)	(-181.7)	(-168.2)	(-157.5)	(-335.4)

Source: Bank of Zaire Annual Reports, and IMF Balance of Payments Statistics, (Original Data in SDRS, converted by the exchange rate.)

There are two main factors which account for the country's large invisible defict; these are: large payments for insurance and freight; and (perhaps more importantly) massive payments for investment income. Over the period 1970-75 payments for shipping accounted for an average of 20% of the country's total export earnings[†]. In this respect, Zaire is no different than the majority of other developing countries which pay out a large proportion of their export earnings for shipping and insurance. The supply of these services tend to be monopolized by the rich industrial countries.[††]

The second item which inflates the country's invisible payments is what is called investment income. This comprises payments for profits on direct foreign investments, and interest on foreign loans. This category includes all income earned by foreigners from direct investment in Zaire. Neither Zaire's foreign trade statistics, nor the IMF statistical publications give complete detailed data on the size and the distribution of this investment income. However, the available figures of investment income (net) for the year 1972 suggest that it amounts to an annual outflow of funds equivalent to about 45% of total invisible payments, and about 25% of the country's export earnings[‡].

[†] Calculated from the IMF Balance of Payments Statistics, 1970-75.

[††] On this issue see, Gosovie, B. (1972) UNCTAD: Compromise and Conflict: The Third World's Quest for an Equitable World Order Through the United Nations (Leiden: A. W. Sijthoff), Chapter VI.

[‡] Calculated from the IMF Balance of Payments Statistics, 1974.

(f) The Government Foreign Borrowing Policy

Foreign domination over the state of Zaire influenced not only its agricultural policies, but also the pattern and distribution of its development expenditure. The extent and the type of foreign direct investment dictated the type of projects which the Government could undertake. The bulk of the government's expenditure was thus devoted to the construction of power systems to feed electricity into the copper-belt area, and to the building of roads and railways for the wellbeing of foreign investments in the mining industry. The "Zairian Sickness" and the concentration of political power in Kinshasa (the capital of the country) also had great influence on the country's expenditure pattern. A large proportion of government expenditure went to finance prestige projects in Kinshasa. Of 92 investment projects contracted in 1972, some 62 were situated in the capital.

Public investment in Zaire was financed by heavy borrowing from abroad. During the 1970's Zaire's external public debt and publically-guaranteed debt rose considerably. The country's total external debt (including undisbursed) increased from US$492 million, at the end of 1970, to US$2.7 billion at the end of 1975. This amounted to an annual rate of growth of 41% (Table VIII.5 overleaf). If the undisbursed amount is excluded, this shows an increase from US$186 million to US$1.7 billion.

Following the oil inflation of 1973/74, the government of Zaire relied increasingly on borrowing from foreign private commercial banks. Between 1970 and 1975 the share of private bank loans in the total disbursed debt rose from 3% to 53% with borrowing in the Eurodollar market accounting for the bulk of the increase. Additionally, the country increased considerably its reliance on short-term credit to finance current account deficits. Such credits rose from US$282.3 million

Table VIII.5: Zaire: Outstanding External Debt: Including Undisbursed (end of period, in million of US $)

	1970	1971	1972	1973	1974	1975	Growth Rate (1970-75)
Total	429.2	632.1	760.8	1,665.3	2,547.9	2,725.3	41
Suppliers Credit	282.3	291.2	289.0	361.4	428.2	378.5	6
Private Banks	58.5	123.9	231.7	479.9	1,278.0	1,273.7	85
Public Bonds	4.4	4.9	4.9	5.2	5.9	5.3	4
Other Private Debt	-	-	-	24.0	24.0	24.0	90
International Organizations	25.0	66.8	85.3	101.0	137.8	286.9	63
Loans from Governments	122.0	145.3	149.9	423.8	674.0	756.0	44
Total	100.0	100.0	100.0	100.0	100.0	100.0	
Suppliers	57.0	46.0	38.0	22.0	17.0	14.0	
Private Banks	12.0	20.0	30.0	45.0	50.0	47.0	
Public Bonds	1.0	1.0	1.0	-	-	-	
Other Private Debt	-	-	-	1.0	1.0	1.0	
International Organizations	5.0	10.0	11.0	6.0	5.0	10.0	
Loans from Governments	25.0	23.0	20.0	25.0	26.0	28.0	

Source: IBRD, cited in the IMF Staff Report for the 1976 Article XIV Consultation. Prepared by the Staff representatives for the 1976 consultation with Zaire April 20, 1977. Appendix II p.85.

in 1970 to US$428.2 million in 1974.

The effects of such massive borrowing on the country's debt servicing ability was aggravated by the fact that a large proportion of the borrowing went to finance projects with long gestation periods and little impact on productive capacity. The effect of such external borrowing in relation to some indicators of the burden of external indebtedness is shown in Table VII.6. From the end of 1970 to the end of 1975 annual interest payments on foreign loans (as a ratio of the country's GDP) increased from 0.5% to 3.2% while the share of debt servicing payments to exports of goods and services increased from 4.7% to 23.8%. This was partly due to the sheer size of external borrowing, and partly due to increased reliance on borrowing on commercial terms. Between 1970 and 1975 the average maturity declined from 17 years to 13 years while the average rate of interest on loans increased from 3.7% to 6.8%. This steady rise in the country's debt servicing payments played a major part in the deterioration of both the balance of payments as well as the budgetary position.

The 1976 Foreign Exchange Crisis: The Immediate Factors

As noted earlier, Zaire's economy is based on the production and exportation of minerals, and in particular copper which accounts for some 70% of total export earnings. The economy is heavily dominated by foreign investment which is concentrated in the export sector. These features made the country particularly vulnerable to the combined effects of inflation, recession, and foreign retaliations - triggered by the attempts of the government to gain control over the country's mineral wealth. Among the adverse effects which can be

Table VIII.6: Zaire: Selected Debt Indicator, 1970-1975

Indicator	1970	1971	1972	1973	1974	1975
Debt Service Payment to Export of Goods and Services %	4.7	5.3	8.1	8.8	11.8	23.8
Amortization Payments to Export of Goods and Services %	3.6	4.0	5.8	5.6	6.6	13.3
Annual Interest Payments GDP %	0.5	0.5	0.9	1.3	2.3	3.2
Weighted Average Terms of Outstanding Disbursed Debt[a]						
Interest Rate (%)	3.7	5.2	5.7	6.7	6.9	6.8
Maturity (years)	17.3	13.8	12.8	12.7	12.7	13.3
Grace Period (years)	3.0	2.8	2.8	3.1	3.5	3.9
Grant Element (%)	34.9	25.8	22.6	17.4	16.7	17.4

Source: IMF Staff estimates, cited in "Zaire: Use of Fund Resources" *op. cit.* p.6.

[a]1970 Data adjusted to exclude obligations to Belgium under the Zairian-Belgian Fund, which were taken over by Belgium in 1971

pointed out as the immediate causes of the 1976 foreign exchange crisis, were: the oil inflation and world recession; the consequent drop in the demand for copper; and the drying up of capital inflows.

The 1974-75 recession in Western industrial countries resulted in a huge build up of copper stocks in the World market. The price of copper in the London Metal Exchange (LME), which determines the copper prices charged by Zaire, fell from US$1.4 per pound to US$0.6 between January and March 1974. The International Council of Copper Exporters (CIPEC) (comprising Zaire, Chile, Zambia, Peru and Indonesia), because of their total dependence on foreign exchange earnings from copper, could not cut down production, to check the downward trend. Copper prices continued to fall during 1975, picked up again in mid-1976 to US$0.75, but fell to a level of US$0.55 towards the end of the year.

In addition to copper, the prices of other mineral exports from Zaire were also affected by the recession. The country's diamond production, which accounts for over half of the World's supply of industrial diamonds, and about 5% of the country's export earnings recorded a price drop of about 19%. The price of cassiterite fell by 28%. Agricultural exports were also hit by the recession recording, a drop in prices averaging 10% in 1975.

The effects of these price changes on the country's export earnings are shown in Table VIII.7 overleaf. The table shows that all export items, except cobalt, recorded falls in export earnings, between 1974 and 1975. Copper showed the largest loss - US$432 million. This was followed by zinc, palm oil and palm, and diamonds, recording losses in export earnings of US$24.4, 15.9 and 12.3 million respectively. When these changes in values were decomposed into volume and price changes the recession-

Table VIII.7: Price and Volume Factors Affecting Export Earnings

Commodity	(% Change) 1974/1975 Volume	Unit Values	Contribution (in US $ m) Volume	Unit Values	Total Change in Export Values
Mining Exports					
Copper	-7.4	-45.0	-60.7	-371.3	-432.0
Cobalt	-14.8	52.0	-10.4	31.8	21.4
Zinc	-51.1	8.7	-28.0	3.6	-24.4
Diamonds	-0.76	-19.1	-0.5	-11.8	-12.3
Cassiterite	0.0	-27.7	0.0	-6.1	-6.1
Gold	-39.4	33.3	-6.2	3.1	-3.1
Agricultural Exports					
Coffee	-24.2	18.5	-14.6	8.5	-6.1
Rubber	-9.0	-30.0	-1.6	-5.0	-6.6
Palm Oil and Palm	-15.1	-47.0	-8.6	-7.3	15.9

Source: Own calculations based on the UN methodology used in the Dell Report *op. cit.* Data were obtained from Bank of Zaire Annual Reports

induced fall in copper prices emerged as the dominant factor, responsible for about US$371.3 million of the loss in foreign exchange earnings (or 75% of the shortfall in export earnings in that year).

These adverse effects from the export side, were compounded by others from the import side. As export prices decreased import prices climbed causing a sharp deterioration in the country's terms of trade. Between 1973 and 1975, the terms of trade of mineral exports fell by 32% while that of agricultural exports deteriorated by 14%. In 1975 the country's terms of trade were below their value in 1970.

The increase in import prices in 1974 was accompanied by some 16% reduction in the volume of imports, so that the increase in the money value of imports (which amounted to US$120 million (Zaires 238 million) was fully attributable to the import price increase. In 1975 import volume fell further by 20%, resulting in a Zaires 253.7 million decrease in the value of imports. Nevertheless, the trade balances recorded a deficit of Zaire's 62.7 million compared with a surplus of Zaire 41.4 million in 1974. For the reasons outlined earlier, the deficit in the invisible balance in 1975, was four times larger than the trade deficit. (See Table VIII.8 overleaf.)

Given the country's dependence on copper, together with its high degree of openess (with a trade ratio to GDP amounting to some 70%) the inflation and the recession in the Western world profoundly affected the economy. On the import side, the ratio of the country's import bill to GDP amounted to 60%, with imports of consumer goods accounting for 30% of the total import bill, while the share of capital good imports (including imports of the mining industry), accounted for 49%. This heavy dependence on imports resulted not only in the propagation of

Table VIII.8: Zaire: Balance of Payments, 1974-1975 (in millions of Zaires)

	1974	1975
Trade Balance	41.4	-62.7
Invisible Balance	-223.9	-385.7
A. Current Account	-182.5	-272.7
B. Capital Account		
Private Capital (net)	137.1	2.93
Official Capital (net)	88.1	87.8
Total	225.2	57.3[a]
Total (A+B)	42.7	-215.4
C. Net Accumulation of Arrears	-	158.5
TOTL (A+B+C)	42.7	-56.9
Memorandum Item		
Gross Official Reserves	68.8	29.3

[a]Taking into account change in outstanding arrears.

Source: Based on Data from Bank of Zaire Annual Reports, IMF Financial Statistics, and IMF Balance of Payments Statistics.

domestic inflation, as import prices increased, but also in the slowing-down of economic activity, as the government attempted to reduce the pressure on the balance of payments by cutting the volume of imports.

On the export side, domestic economic activty in Zaire depends on three major expansionary mechanisms generated by the copper industry. As a foreign exchange earner, income from copper exports finances imports of materials and semi-finished goods needed for industry. As a source of budgetary revenue it provides the financial power for government current and development expenditure. As a source of demand for locally produced materials it provides a strong stimulus for local economic activity. The drop in copper export earnings turned this expansionary mechanism into a recessionary one which had severe adverse effect on the country's growth rate. (See Figure VIII.1).

The outcome of these adverse effects on the economy are summarised in Table VII.9 overleaf. Domestic inflation which was running at an average rate of 12% between 1970-73 accelerated to 41% in 1975. Budgetary revenue which was growing at an average rate of 9.6% fell by about 20%. However, government expenditure was reduced by more than revenue causing a reduction in the overall government deficit amounting to Zaire's 41 million. Private consumption, in nominal terms, fell from an average annual increase of 33.8% to 3.1% in 1975, while in real terms it fell by 38%. Investment expenditure dropped from an average growth rate of 25% to -8.5%. This was partly due to the deepening of the domestic recession, and partly due to the drying up of foreign and local private investment following the 1974 nationalization decision.

Figure VIII. 1: Explaining the Immediate Causes of the Foreign Exchange Crisis in Zaire

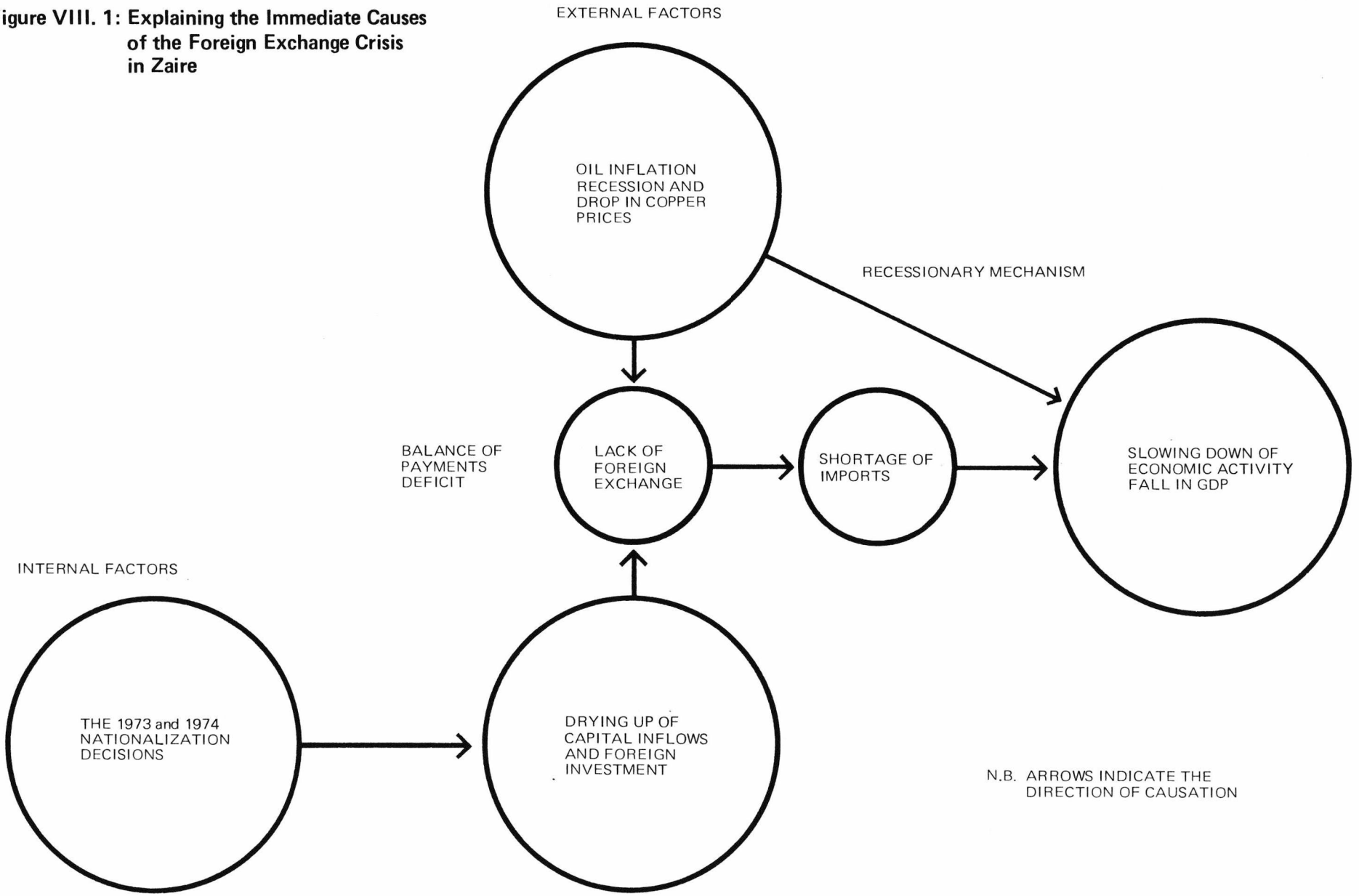


Table VIII.9: Zaire: Main Economic Indicators 1973-1975

Demand, Prices and Output	Average 1973/1970	1973	1974 (% Change)	1975
Aggregate domestic demand (nominal)	20.0	20.3	39.3	-0.4
Private consumption	(21.8)	(30.2)	(49.6)	(3.1)
Government consumption	(12.0)	(12.0)	(40.0)	(3.0)
Gross investment expenditure	(26.6)	(0.2)	(48.1)	(-8.5)
Domestic GDP deflator	10	9	24	25
Consumer prices	12	19	31.5	41.3
Real aggregate demand	9	10.6	13	-21
Real GDP growth	6.6	7.1	6.3	-6.0
Budget and Money Supply				
Government revenue	10	25	44	-19
Government expenditure	15	27	61	-20
Deficit (in million of Zaires)	50	78	213	172
Domestic credit	23	30	90	33
Money supply (broadly defined)	21	34	35	10

Sources: Based on data obtained from Bank of Zaire Annual Reports, and IMF Financial Statistics.

As a result aggregate domestic demand fell by 0.4% in money terms and by 2.1% in real terms. Consequently the economy recorded a negative growth rate of output of about 6% in 1975 compared with an average growth rate of 7% in the last three years. This worsening economic situation was compounded by the government's decision to nationalize all foreign enterprises with turnover in excess of one million zaires, this precipitated immediate curtailment of capital inflows and a massive flight of capital from Zaire. Foreign private capital (net) which was Zaires 133.1 million fell by 98% to Zaires 3 million in 1975. As a result, external payments arrears totalling Zaires 159 million accumulated, while the autonomous capital account fell short of the current account deficit and a gap of Zaires 215.4 million was left to be financed by drawing on the country's reserves, which stood at Zaires 29.3 million (Table VII.8) . These circumstances forced the government to use the IMF conditional lending.

The IMF Diagnosis

The immediate factors which were responsible for the 1976 foreign exchange crisis in Zaire (the oil inflation; the recession in the Western World; and the consequent drop in copper prices), were nothing but external factors beyond the control of the government. In the context of the structure of the IMF conditionality, such external shocks should have been dealt with through drawings on facilities with mild conditionality, such as the oil facility or the compensatory financing facility which deals with export shortfalls and excess costs of food imports. The 1975/77

IMF mission to Zaire, although it appreciated the adverse influence of these external factors made drawings on the oil and compensatory facilities, conditional on the country's "co-operation" with the Fund in an effort to find appropriate solutions to its balance of payments deficit†. This "cooperation" took the form of the IMF imposition (and the country's acceptance) of a full scale stabilization programme supported by a SDR's 41 million stand-by arrangement. In effect the implementation of the policy measures accompanying the stand-by arrangement, became the conditions for the country's drawings on the oil and the compensatory facilities. This is because, in explaining the causes of the country's foreign exchange crisis, the IMF mission viewed the adverse external shocks as secondary in importance, while the chief cause was said to be internal imbalance due to excessive demand pressures over the period 1970-1974††. The excess demand pressures were viewed to be the result of expansionary domestic fiscal and monetary policies, as well as excessive private consumption which was

> *"greatly stimulated by wage increases, and the wealth redistribution effects of the November 1973 decision to transfer to Zairian nationals the ownership of all foreign-owned enterprises operating in agriculture transport and commerce"* ‡.

Such domestic demand pressures were held responsible not only for pushing up imports, but also for eroding the profitability of exports, and in particular copper exports.

---

† "The Use of the IMF Resources", *op. cit.*, p.16.

†† "IMF Articles of Consultation With Zaire", *op. cit.*, p.2.

‡ *Ibid.*, p.4.

While the IMF officials ascribed the external deficit to domestic demand pressures over the period 1970-1974, they made no attempt to link the large drop in domestic aggregate demand in the crisis year (1975)(which was associated with a 6% deterioration in the country's GDP)) with the developments in the external sector (Table VIII.9 overleaf). As was argued earlier, this was directly linked to the recessionary mechanism initiated by the combined effects of inflation, and recession in the Western World, and the consequent drop in copper prices. Instead they asserted that the deterioration in real GDP was caused by the 1974 nationalization decision, and by import shortages due to a lack of foreign exchange that had nothing to do with external effects. They wrote:

> *"While total domestic demand reached a very high level in 1974, domestic production began to lag behind. Late in the year, a decision was taken to nationalize all enterprises with a turnover exceeding 2l million (including some of those transferred in November 1973 to Zairian nationals). During 1975 the adverse effects on economic activity, of these measures were compounded by increasing shortages of imported raw materials, spare parts, and other intermediate products, as the stocks accumulated in 1974 were depleted, and the volume of imports fell considerably because of the lack of foreign exchange"*[†] (emphasis supplied).

According to the IMF analysis the nationalization had adverse effects on economic activity, not because of foreign retaliations which restricted capital inflows and foreign investment, but rather because of the incapability of Zaire nationals to manage the nationalized enterprises. They also asserted that a denationalization would stimulate capital inflows, and improve the country's economic position. Later denationalization was one of the policy conditions imposed by the IMF to

---

[†] IMF Articles of Consultation with Zaire *op. cit.*, p.4.

"improve" the financial position. When reviewing the policy conditions of their 1977 stand-by arrangement in Zaire, the IMF officials stated:

> *"... To this effect (to improve the country's financial position) most of the enterprises which had been nationalized were being returned to their former owners, who were now authorised to maintain a 60% ownership participation in the company, with the remaining 40% to be sold to a Zairian partner of their choice, or to the government. It was hoped that this measure would also result in a resumption of traditional trade credits and some capital inflows"*[†].

In analysing internal imbalance, the Fund officials departed from their standard diagnostic methodology which considers all types of government intervention in the economy (and in particular government price control and subsidization policies), as distortions of the market forces. The failure of the IMF experts to point out this weakness of the economy, and the absence of any policy recommendation to abolish price controls, is an illustration of the role which the Fund plays to protect and stimulate foreign investments in developing countries. The "freeing" of agricultural prices in Zaire would improve the standard of living of the peasant population, but at the same time it would lead to higher wage demands which would be paid by the foreign investors in the mining sector. In the case of Zaire, the Fund supported the continuation of the cheap-labour strategy.

The First Stand-By Arrangement, 1976

Stemming from its diagnosis that the foreign exchange crisis in Zaire was caused by domestic excessive demand pressures which eroded the profitability of exports, the 1976 IMF stabilization programme supported by a stand-by arrangement was said to be :

[†] IMF Articles of Consultation with Zaire, *op. cit.*, p.12-13.

"designed to reduce excess demand pressures and permit a revival in economic activity through the following measures:

(a) A 42% depreciation of the Zaire in terms of SDR, which aimed at re-establishing the profitability of the export sector, and specially the copper sector; and increasing budgetary revenue which would have fallen considerably otherwise;

(b) A 20% limit (on average) on wage increases aimed at reducing real disposable income in the urban sector;

(c) A considerable reduction in government expenditure in real terms;

(d) A limit on total credit expansion to 22% in 1976, or less than the expected rise in domestic prices resulting from the exchange rate depreciation; and

(e) The renegotiation of the external public debt, and a commitment not to contract new foreign loans in the maturity range of 1-10 years except for the financing of priority projects already under way.

In addition the programme included intentions not to introduce or intensify exchange and trade restrictions and a statement of intent to reduce payments arrears by at least SDR 60 million during 1976"[†].

The immediate balance of payments objectives of the programme were to reduce the overall balance of payments deficits to a sustainable level of US $ 30 million by the end of 1976 (see Table VIII.10). The programme was also said to be aimed at increasing export proceeds by 40% from US $ 720 million to US $ 1,200 million. This export target was based on the IMF assumption that world copper prices would average US $ 0.66 per pound, and that the volume of exports would increase by about 5% from 477 to 500 thousand metric tons.

A second performance criteria was to keep government nominal expenditure virtually unchanged at Zaires 680 million, and to reduce the government deficit to Z 60 million compared with a deficit of Z 172 million in the pre-programme year. A third programme, criteria was

---

[†] "The Use of the Fund Resources", *op. cit.*, p.4.

Table VIII.10: Performance Criteria and Out-Turn, 1976 Stand-By Arrangement

	1975	IMF Targets for 1976	out-turn in 1976
(in US $ m)			
Overall Balance of Payment			
Deficit	-537	-30	-740
Export Proceeds	853	1200	1016
(in Z m)			
Government Expenditure			
Government Expenditure	707.8	680	800
Government Revenue	372	620	468
Government Deficit	-172	-60	-313
(% change)			
Bank Credit to the Private Sector	35	32	24.3
Total Domestic Credit	33	22	47.0
Comsumer Prices	32	40-45	88.2
Money Wages	20	22	20.0

Programme Assumptions	IMF Assumption	Actual
World Copper Prices ($ per pound)	0.66	0.64
Copper Production (000 metric tons)	500	450
Debt Relief (US $ m)	200	110

Source: Adapted From the IMF Articles of Consultation with Zaire *op. cit.* pp.5-11

to limit the expansion of domestic bank credit to households, and enterprises to 32%, compared with 35% in the pre-programme year. This, together with a ceiling on credit expansion to the government, implied a ceiling on total net domestic asset creation of 22%, compared with 33% in the previous year. The programme also projected that domestic consumer prices would increase by 40-45% so that real domestic assets were expected to fall by 18-23%.

The achievement of the balance of payments target, and the budgetary target, were based on the IMF assumption that it would assist Zaire to obtain a debt relief from its creditors of about US $ 200 million through multilateral negotiation. As a condition for this the government undertook to put aside 10% of export receipts in 1976 to meet debt service payments.

The nature, and the severity of these IMF policy conditions, were neither compatible with the real causes of the foreign exchange crisis, nor with the SDR 41 million made available by the IMF under the stand-by arrangement. The basic element in the programme was to increase copper exports through a combination of devaluation and wage restraint. But the real factors behind the shortfall in copper export proceeds was the drop in the world price of copper (as a result of reductions in foreign demand) as the oil recession hit the industrial West. In 1975 the price of copper in the Western world, fell to a level below the cost of production in Zaire. According to the IMF's own assessment the fall in copper prices was temporary in character, and prices would pick up as the recession in the industrial West came to an end[†]. Under such circumstances,

---

[†] See "The Use of the IMF Resources ...", *op. cit.*, p.16.

an irreversible measure, such as devaluation which is designed to stimulate foreign demand by further reducing the foreign exchange price of copper, was clearly inappropriate.

On the other hand, devaluation as a measure to increase the profitability of export supply was also irrelevant. This is because the erosion of profitability in the copper sector was caused by temporary factors, the disappearance of which, would have automatically recouped the lost profitability. Even if it is assumed that the fall in copper foreign exchange price was permanent, devaluation, in the light of the cost structure in the copper sector, would still be an inappropriate measure to increase the profitability of supply. The cost structure of the copper sector is such that about 54% of total cost is of imported materials; while the cost of wages and salaries of expatriate personnel (which are protected by full price indexation) constitutes some 14% of the total[†]. As the IMF programme excluded expatriate workers from its measures of wage restraint, this means that about 68% of the production costs would increase in the direction of devaluation, as import and domestic prices rise. This, besides indicating that the devaluation policy would have a very slim chance of success, also implies that the burden of restoring profitability would predominantly be shouldered by national workers, whose money wages constitute about 25% of the total cost, and whose real wages in 1975 were already below their level in 1910.

[†] These figures are based on Gecamines which produces 90% of the country's copper. See Table VIII.11.

Some idea of the effect of devaluation on the profitability of exports, during the 1976 IMF programme, can be obtained by examining the profit, and cost accounts of Gecamines company, which produces over 90% of the country's copper and cobalt (see Table VIII.11). By the end of the 1976 IMF programme, the total costs of this company stood at Z 410 million, compared with Z 253 million in 1975; an increase of 62%. Over 90% of this increase was due to the rise in the cost of imported materials and payments for expatriate personnel. While the wage costs of native workers increased by 8%. This increase in total costs was more than offset by the increase in total revenue leading to a remarkable increase in profits of Z118.7 million from Z65.7 million in 1975 to Z47.4 million. Yet, the increase in the company's profits was entirely due to recovery of the World price of copper, as the industrial West gradually came out of the recession. The volume of copper produced by the company fell by 8% to 450 thousand metric tons in 1976, while its cobalt output remained unchanged at 10.9 thousand metric tons. The increase in the company's profitability cannot be attributed to the IMF devaluation policy. In fact, a larger increase in the company's profitability could have been realized, in the absence of devalutation, exclusively due to the recovery of the foreign exchange price of copper. Had it not been for this price recovery, devaluation would have had an adverse impact on the company's profitability. When the post-programme volume of production in 1976 was evaluated at the 1975 foreign exchange prices of copper and cobalt, converted by the post-devaluation exchange rate, the company's accounts recorded a loss of Z 27.3 million (Table VIII.11).

Table VIII.11: Zaire: Gecamines - Selected Data (1972-76) (in millions of Zaires)

	1972	1973	1974	1975	1976	1976[a]/1975	1976[b]
A. Total Sales	259.2	445.1	518.8	318.8	657.0	106.0	382.3
Copper	(213.8)	(374.2)	(418.1)	(230.2)	(424.3)	(84.3)	(291.0)
Cobalt	(30.7)	(51.4)	(57.0)	(47.5)	(120.7)	(154.0)	(47.6)
B. Costs	148.3	180.4	218.5	253.1	409.6	62.0	409.6
Wages (Expatriates)	(15.3)	(19.0)	(27.1)	(33.0)	(90.0)	(173.0)	
Wages (Zairians)	(34.1)	(43.0)	(60.3)	(70.0)	(75.6)	(8.0)	
Imported Materials	(83.0)	(101.4)	(124.8)	(137.1)	(230.0)	(67.0)	
Other Domestic Costs	(15.9)	(17.0)	(6.3)	(13.0)	(14.0)	(7.6)	
C. Profits=(A-B)	110.9	264.7	300.3	65.7	247.4		-27.3

[a]percentage change [b]output in 1976 evaluated at 1975 world prices converted by the post-devaluation exchange rate

Source: Annual Report of Gecamines (Rapport Annuel, 1975), and World Bank Appraisal of Gecamines, Zaire Report, No.576a-CK.

However, despite the increase in the company's profits its overall performance was below programme expectations. According to the IMF staff appraisal:

> *"over the year as a whole however, Gecamines profitability and cash flow position did not improve to the extent expected, not only because of the smaller volume of sales and lower prices than anticipated, but also because of unforeseen increases in costs and in accounts receivable"* .

The poor performance of Gecamines (as compared with the IMF programme projections), caused government finance to considerably depart from the programme target. Out of a total tax liability amounting to Z 213 million[†], Gecamines was able to pay only Z 106 million Additionally, there was a shortfall in tax receipts from international trade of Z170 million. Thus, despite large increases in government revenue from direct taxes, which exceeded programme projections by 24%, budgetary revenue fell short of the IMF target by a margin of Zaire 130 million. This was topped by a large escalation in budgetary costs resulting from the devaluation-induced inflation causing government expenditure to exceed its target by Z 120 million. Consequently the budgetary deficit widened by Z 313 million compared with a target of Z 60 million. The post-programme government deficit was twice as large as that of the pre-programme year.

To finance its huge deficit the government resorted to borrowing from the banking system. As a result, bank credit to the government rose by 61%. By contrast credit to the private sector increased by 24%, or less than the programme ceiling. However the much larger borrowing requirements of the government, brought the rate of expansion of total domestic credit to 47% in 1976,exceeding its target by 25%.

[†] IMF Articles of Consultation with Zaire *op. cit.*, p.9.

Also the primary programme objective, to reduce the overall payments deficit to US $ 30 million, was not realized. At the end of the programme the balance of payments deficit stood at US $ 156 million Domestic prices, which were projected to increase by 40-45%, accelerated to 88.2% in 1976 compared to 33% in 1975.

The only element in the programme which satisfied the IMF criteria was the ceiling on wage increase, where nominal wages (on average) rose by 20%, compared with a limit of 22%. Wages in other sectors of the economy, and in particular those of the expatriate workers in the copper sector, increased by more than 100%. For the economy as a whole, the wage increase was well within the IMF limit.

Although all IMF performance criteria except the wage guidelines were breached by a wide margin and no programme objectives were realized, the Fund had no disagreement with Mobutu's government. IMF assistance to Zaire was not suspended. This if compared with the Fund's treatment of Manley's government in Jamaica clearly illustrates the IMF bias. The favourable treatment to Mobutu's government was apparent not only in the attitude of the Fund, but also in the attitude of the country's official[†] and commercial creditors, who responded to the IMF mediation. They accepted to reschedule the country's debt and provide additional aid, despite the programme failure, and the worsening economic situation.

While negotiating the debt rescheduling terms with the authorities, Zaire's official creditor's and the commercial banks insisted on the condition that, no creditor should be granted terms less favourable than

---

[†] Zaire official creditors were Belgium, Canada, France, West Germany, Italy, Japan, Netherlands, Sweden, Switzerland, the UK and the US.

any other creditor. They also set the condition that Zaire must undertake a second IMF stabilization programme in the higher credit tranches. As reported in the IMF Articles of consultation with Zaire, commercial bank rescheduling conditions included:

> *"(1) to clear all arrears on interest due to the participating banks, and to maintain such payments on current basis;*
> *(2) to deposit in a special account abroad the principal in arrears, and all maturing principal payments due to the banks; and*
> *(3) to open negotiations with the Fund for a stand-by arrangement in the second and third credit tranches"*[†].

In exchange for these commitments the banks rewarded Zaire with medium-term credits, amounting to US $ 250 million to be extended to the Bank of Zaire.

> *"The drawing of these funds (was) to be over a 12-month period beginning on the date of the stand-by arrangement from the Fund becames effective, and (would) be contingent upon Zaire keeping current the payments on its debt to the banks; remaining in a position to make purchases under the stand-by arrangement; and otherwise maintaining its general credit standing"*[††].

Accordingly, Zaire undertook a second IMF stand-by programme.

The Second-Stand-By Arrangement (1977)

The second SDR 45 million stabilization programme covered the period from Febuary 1977 to February 1978. The soaring inflation rate which was exacerbated by the 1976 IMF programme became the main focus of the 1977 programme. It was said to be aimed at reducing the rate of inflation, restoring a sustainable balance of payments position and

---

[†] IMF Articles of Consultation with Zaire *op. cit.*, p.10.

[††] *Ibid.*

ensuring a moderate recovery in economic activity through an improvement in the supply conditions and by restraint on domestic demand.

Besides the standard measures of cuts in government expenditure, increases in taxes, and curtailment of bank credit, the IMF condition, this time, included, denationalization; the removal of restrictions on foreign exchange; and the termination of Zaire's bilateral payments relations with Uganda, Rwanda, and Burundi. The programme also included a wage freeze covering all sectors, including those benefiting from indexation.

On the basis of the assumption that the volume of copper production would remain unchanged, the programme aimed at increasing export receipts by 20% from US $ 992 million in 1976 to US $ 1,240 million. World copper prices (LME) were expected to increase by 27%, and export receipts from coffee were expected to double. Assuming disbursement of US $ 150 million from foreign commercial banks, under the terms of the rescheduling agreement and other known borrowing from abroad, the programme aimed at a target of total foreign exchange receipts amounting to US $ 1,620 million in 1977 compared with US $ 1,470 million in 1976. As this improvement in foreign exchange receipts was expected to be offset by scheduled larger debt service repayment, and by reductions in payments, arrears, the programme allowed for no increase in the foreign exchange allocated for imports.

The programme assumptions, targets, and achievements are summarised in Table VIII.12, which shows that no performance criteria were satisfied. The government deficit widened to Z 492 million compared with a target of Z 160 million in 1978, and a deficit of Z313 million in 1976. Total domestic credit increased by 39% compared with a target of 24%. The volume of copper production fell to 400 thousand metric tons, compared

Table VIII.12: Performance Criteria and Out-Turn, 1977 Stand-By Arrangement

	1976[a]	IMF Target for 1977[a]	out-turn in 1978[b]
(in US $ m)			
Export Receipts	992	1240	920
Total Foreign Exchange Receipts	1470	1620	n/a
(in Z m)			
Government Expenditure	800	834	1123
Government Revenue	468	659	631
Government Deficit	-313	-160	-492
(% Change)			
Total Domestic Credit	47	24	39
Wages	20	20	n/a

Programme Assumption	IMF Assumption		Actual
World Copper Prices (US $ per pound)	0.64	0.68	0.66
Copper Production (000's Metric Tons)	450	450	400
Debt Relief (US $ m)	110	380	n/a

[a] obtained from the IMF Articles of Consultation with Zaire *op. cit.*, pp.12-14.

[b] obtained from the IMF International Financial Statistics and the IMF Government Finance Statistics Year Book

with a target of 24%. The volume of copper production fell to 400 thousand metric tons compared with a level of 450 thousand in 1976. Total export receipts fell short of programme expectations by US $ 320 million. Nevertheless, the IMF programme can not be said to have been a failure. The programme was interrupted by a 2-month civil war which had large adverse effects on economic activity.

In March 1977 the so-called Congolese National Liberation Front (FLNC) launched an armed attack from Angola, with the aim of overthrowing Mobutu's regime. Its armed men swept through Shaba penetrating far into Zaire, within miles of the Kolwezi copper mining sector, then retreated before Zaire's forces (backed by Moroccan troops). Belgium, France, and the US provided vital military assistance for crushing the FLNC.

Within 14 months of the first attack, the FLNC launched a second entering Kolwezi on May 12 1978. At the time foreign investment in Zaire was valued over one billion US dollars†. On May 18, French armed forces invaded Zaire under the guise of *"protecting the French and foreign residents of Kolwezi, and re-establish security there"*††. This was followed by an invasion by Belgian troops in co-ordination with French and US logistics. The French-Belgian invasion had the support of all other western countries that control the IMF. Speaking for the EEC the Danish Foreign Minister stated that:

> *"... the French initiative in Kolwezi has met with our complete understanding as a purely humanitarian and, therefore, a very natural rescue operation"*‡.

---

† US Dept. of Commerce, Overseas, Business Report, Marketing in Zaire, April 1977, p.18.

†† Keesings Contemporary Archives, August 11, 1978, p.29126.

‡ *Ibid.*

The military rescue operation was followed by an economic rescue operation, in the form of the Brussels summit meeting on the Zaire economy. Eight members of the Group of Ten, the World Bank, and the IMF met on June 13-14, 1978 (under the name of the so-called Consultative Group for Zaire), to study plans to revitalize the Zaire's economy[†]. Besides an aid programme of US $ 100 million, which the members of the Summit promised to the government of Ziare, it was decided that the financial operations of the economy would be run by foreign experts with an IMF official to be appointed as a Deputy Director of the Bank of Zaire, and another offical to supervise the Ministry of Finance.

The Fund literally took over the management of Zaire's Central Bank, and the Ministry of Finance. The IMF dispatched Mr. E. Blumenthal to direct the Bank of Zaire. His immediate task was to prevent the debt system from collapsing. The control of foreign exchange and import rationing which the Fund normally objected to, became the only measure he could use to ensure the resumption of debt repayment.

> *"Banks cannot now open a letter of credit unless they have the foreign exchange in their own hands. They cannot add to existing debt, and 30% of export receipts must automatically be sent to Banque du Zaire (for debt repayments). The remaining 70% has to be split according to a strict set of guidelines: 35% to raw materials, spare parts, etc., 33% to food and pharmaceuticals, 25% to invisibles, 2% to energy and 5% to others"*[††].

During IMF control, the cycle of aid-stabilization programmes and debt rescheduling, was consistently repeated (see Table VIII.13). This cycle was generated by a group of Western governments. They met under the name of the Consultative Group for Zaire to advise the IMF of how to

---

[†] These were Belgium, Canada, France, West Germany, Italy Netherlands, the US and the UK. Japan, and Italy also attended, while Saudi Arabia was invited but did not attend.

[††] Bank of Zaire, circular No.156 dated September 1978, cited in Euromoney February 1979, p.10.

Table VIII.13: Zaire: IMF Programmes and Other Related Developments During 1978-81

Date	Event
November 1978	a devaluation of the Zaire from SDR 1= Z1 , to SDR 1 = Z 2.00, was imposed as a precondition for IMF assistance.
August 28, 1979	Zaire undertook an IMF stand-by programme of SDR 118 million (US $ 153 million) covering the period July 1979 to December 31, 1980. The programme was said to be aimed at creating a sustainable balance of payments, and reducing the rate of inflation. The basic programme features were increased central Bank control over foreign exchange transactions; the adoption of incomes policy; and deceleration of credit expansion. The programme involved a devaluation of the Zaire from SDR 1 = Z 2.00, to SDR 1 = Z 2.67.
December 1979	the country's official creditors "the Paris Club" agreed to a second rescheduling of its debt after the country had failed to repay US $ 400 million fell due since the first rescheduling in 1976. The

Table VIII.14 (Cont'd.)

Date	Event
December 1979 (Cont'd.)	rescheduling was made conditional on fulfilment by Zaire of economic targets of the (1979-1980) IMF programme. The "Paris Club" also agreed to examine the rescheduling, at a later date, of Zaire's debts falling due in 1980 and 1982, on the condition that agreement was reached with the IMF on an economic programme covering this period.
January 1980	Drawings under 1979-1980 stand-by were suspended when the 1979 government deficit (which stood at US $ 230 million in 1970) exceed the IMF target of US $ 350 million by US $ 211 million. Drawings were resumed when the IMF revised its criteria.
February 1980	A further 30% devaluation was imposed under the (1979-1980) stand-by programme. The Zaire fell from SDR 1 = Z 2.67 to SDR 1 = Z 3.81. The Consultative Group For Zaire met for the third time since its creation in 1976. The Group decided to provide Zaire with balance of payments support totalling US $ 328 million.

Table VIII.14 (Cont'd.)

Date	Event
April 1980	An agreement with Zaire's 122 commercial banks creditors was reached providing for a second re-scheduling of their debt. The conditions for this agreement were similar to those of the "Paris Club" agreement.
May 1980	The CGFZ met for the fourth time and decided to increase economic aid to Zaire, provided that the country undertook a further IMF stabilization programme.
June 1981	Zaire undertook an IMF Extended Arrangement Programme supported by US $ 1.06 billion, covering the period June 1981 to June 1984 the programme was said to be aimed at increasing the profitability of export supply by a further devaluation of the Zaire from SDR 1 = Z 3.81 to SDR 1 = Z 6.15.
July 1981	A third Agreeement was concluded with the "Paris Club" and commercial banks to reschedule Zaire's debt which stood at US $ 4,800 million by the end of 1980.

Source: Collected from Keesings Contemporary Archives, pages 28287, 28397, 28398, 29131, 29125, 29126, 30426, 30427, 31301, 31303.

run the economy, and to provide additional aid for Zaire. The same group met under the name of the "Paris Club", to negotiate the conditions for rescheduling the country's official debt, and once more under the Group of Ten to push for and approve of IMF programmes in Zaire.

The IMF Politics in Zaire

In 1973/74, Western governments were caught in a trap of their own creation, when a wide array of plantations, commercial, and industrial enterprises were taken from their foreign owners, and distributed to party officials or run by the state. Mobutu who was maintained in power to serve the interests of his foreign backers began to threaten the very interests he was made to protect. His actions were met by a flight of capital and curtailment of aid which aggravated the economic crisis and called for the IMF intervention.

The Fund's primary function in Zaire was to ensure that the country would repay its debts, and to act as a mediator between Mobutu's government and Western interests. Under the Fund's pressure the 1973/74 nationalziation was reversed, and the former foreign owners were invited back. To avoid any possible retaliations from party officials who benefited from the nationalization foreign owners were made to share a 40% ownership with Zairian partners. By this agreement the inflow of capital was resumed.

But the Zairian problem proved to be too difficult to be solved by this form of IMF mediation. Exacerbated by the crisis, the conditions

which kept Mobutu in power became the very factors that threatened the survival of his regime. The army, which was deliberately kept weak to prevent it from becoming a pole of opposition to the government, proved to be ineffective in stopping the armed opposition of the FLNC; and in 1977 France, Belgium and the US had to invade Zaire to protect their own economic interests.

Following this invasion it was realized that the country was incapable of meeting the conditionality of foreign capital advanced by the IMF (with regard to debt rescheduling and debt repayments). It became clear that the IMF policy of depressing real wages could not by itself ensure the repayment of foreign debts. The income redistributed in this way, plus large amounts of foreign aid were unproductively consumed or banked in foreign countries by the ruling elite. This led the Consultative Group for Zaire to hand over the management of the economy to the IMF.

Between its first intervention in 1976, and 1981, the Zairian national currency (the Zaire) was devalued from 116 American cents to 16 cents. The effect of the IMF devaluation policy on real wages was drastic. Real wages, which in 1976, were already below their 1910 level, deteriorated further, by a proportion of 180%. This resulted in mass pauperization of workers and peasants. As put by the Financial Times:

> *"It is calculated that real wages in the cities are a fifth of what they were in 1960. The wage of an unskilled worker, some Zaire 40 (US $ 7) a month does not buy one bag of manioc flour (the staple diet), one bag feeds two people for a month"*[†].

[†] Financial Times, London, February 12, 1979.

It is always claimed that, because of their drastic consequences, any government which attempts to carry out the IMF measures, would find itself voted out of office. This claim might be true in a parliamentary democracy like Jamaica. In the case of Zaire there is no public opinion, no electoral system, and no peaceful mechanism of changing the government. Any form of opposition to the government is remorselessly crushed. And as long as the government's foreign bankers are forthcoming with military and economic aid the fragmented opposition which work from outside the country has little chance of success.

The IMF role in Zaire was not purely technical. The Fund was chiefly preoccupied with the task of defusing the contradictions which arose between the interests of some Western countries and the interest of Zaire's ruling elite. The IMF aid, and aid from other Western countries was not used to promote the viability of the economy as such, but rather to guarantee the longevity of the Mobutu's regime. The experience of Zaire illustrates the Fund's preparedness to carry out these tasks, at the high price of depressing real wages, forcing workers and peasants to the brink of starvation.

CHAPTER NINE

DEVALUATION AND ITS EFFECT ON EXPORT COMPETITIVENESS AND THE BALANCE OF PAYMENTS: THE EXPERIENCE OF JAMAICA AND ZAIRE

Introduction

The previous two chapters were devoted to the study of the IMF conditionality in Jamaica and Zaire. They concentrated on the analysis of the causes of balance of payments disequilibria, and the developments prior to and after the IMF intervention. The IMF policies were evaluated with regard to both the appropriateness of diagnosis and the effectiveness of prescriptions. This chapter concentrates on the application of the value added, and the supply side balance of payments models (developed in Chapter Six) for the Jamaican and Zairian economies.

The Effect of Devaluation on the Competitiveness and the Profitability of Exports

As was noted before, between 1977 and 1979 Jamaica undertook three IMF programmes, under all of which the IMF assistance was suspended because of major disagreements between the Jamaican government, and the Fund. During the course of these agreements the Jamaican dollar was devalued by a weighted average of 46%. As for Zaire, it undertook its first IMF stabilization programme in 1976. Under this programme the Zaire

was devalued by 42%. This was followed by a second IMF programme in 1977, which was interrupted by the Civil War. After the Civil War, Zaire undertook a series of IMF-imposed mini-devaluations and between 1976:IV and 1981:IV the Zaire was devalued by about 82%.

One of the primary objectives of the IMF devaluation policy, in the case of both Jamaica and Zaire, was to improve the profitability and the competitiveness of exports. In this respect the value-added model of Chapter Six offers a useful criterion to assess the effects of devaluation. The model postulated that the effect of devaluation on export competitiveness (defined as the foreign exchange earned per unit of domestic resources used) can be measured by the response of export prices, domestic prices, imported input prices, and the volume of exports, (with respect to a change in the exchange rate). The model measures these responses by: K_X=the degree of pass-through on the side of exports; e_{P_D}=the elasticity of domestic input prices; e_{P_m}=the elasticity of import prices; and s_X=the elasticity of export supply. In addition to estimates of these elasticities, the application of this model requires estimates of w_1=the ratio of export value to value added, and w_2=the ratio of imported inputs to value added. First, the basic foreign trade parameters for the Jamaican and Zairian economies will be estimated.

Export and Import Functions: Some Estimates

The export sectors of Jamaica and Zaire are similar in the sense that both produce mineral raw materials, which are important inputs for the industries of West Europe, and The US. Another apparent similarity is

that, the export sectors of both countries are heavily dominated by foreign companies, which export the bulk of their output to their countries of origin. In estimating the export demand function for Jamaica and Zaire such considerations must be taken into account. To do this, the equilibrium and disequilibrium models specified in Chapter Six (equations (6.19) and (6.24)) will be used here but with some change in the measurement of the equation variables. That is, foreign demand for a particular mineral input is viewed as a function of the ratio of its price, to the price of other competing inputs and a measure of industrial activity in importing countries. The demand for Zairian copper, for example, is viewed to depend on Zairian copper prices, the price of its principal substitute (aluminium), and the OCED index of industrial activity. While the demand for Jamaican bauxite/aluminium is viewed to depend on its price, the price of copper, and the US index of industrial activity[†].

In addition to export demand functions, this section estimates export supply and import demand, using the functional forms of equations (6.22), (6.26) and (6.28) respectively. In the case of Jamaica the export supply and demand functions are estimated for: bauxite/aluminium; sugar; and total exports. While in the case of Zaire they are estimated for: copper; coffee; and total exports. In the case of both countries, the import demand function is estimated for the imports of consumer goods, raw materials, capital goods, and total imports.

The export supply and demand equations are estimated simultaneously using the Full Information Maximum Likelihood Method (FIML), while the

---

[†] Initial experiments showed that these specifications yield superior results compared with traditional specifications where the demand for exports is specified as a function of the ratio of export prices to the export prices of the country's trading partners, and World income.

import demand equations are estimated using Ordinary Least Squares (LSQ). The data used are quarterly data covering the period 1965:I to 1977:IV (for Jamaica) and the period 1965:I to 1975/IV for Zaire. The full estimated equations are shown in Tables IX.1, IX.2, IX.3 IX.4, and IX.5. The elasticities obtained from these equations are shown in Tables IX.6, IX.7, and IX.8.

Table IX.6 shows the estimated price, and income elasticities of demand for imports. From the table it can be seen that the price elasticities of all import categories are very small, indicating a highly inelastic demand for imports. In the case of Jamaica the demand for consumer goods is more price inelastic than all other import categories. In the case of Zaire it is the demand for raw materials which is the more price inelastic. (See Table IX.6 overleaf.)

The price and income elasticities of demand for exports are listed in Table IX.7. In all cases the estimated price elasticities (in absolute value) are less than unity, indicating an inelastic demand for the exports of Jamaica and Zaire. In general, the demand for the two countries' principal mineral exports is more price inelastic than the demand for their principal agricultural exports.

The implied supply price elasticities of exports computed from the estimated supply equations are shown in Table IX.8. In all cases the supply price elasticities are less than unity, implying a small response of export supply to relative price change. In general, the supply of mineral exports are more price elastic than the supply of agricultural exports. Also, the price elasticities for total exports estimated directly are close to those computed from the estimated elasticities of individual commodities.

Table IX.1: Jamaica: Estimates of Supply and Demand Elasticities For Selected Exports (Disequilibrium)

Bauxite/Aluminium

1. $\log P_{x_t} = -4.16 + 1.74 \log x_t - 0.15 \log TR_t + 0.55 \log P_{D_t}$
   $(-2.18)\ (3.08)\qquad (-2.33)\qquad (2.68)$

   $+ 0.18\ P_{x_{t-1}}$
   (1.81)

2. $\log x_t = 0.04 - 0.30 \log (P_x/P_{x_w})_t + 1.55 \log Y_{w_t}$
   $(0.61)(-2.38)\qquad (4.55)$

   $- 0.50 \log x_{t-1}$
   (-3.18)

P_x = bauxite/aluminium prices

x = volume index of bauxite/aluminium exports

P_D = domestic prices

P_{x_w} = the world price of copper

Y_w = index of industrial output in the US

TR = trend of real income

Sugar

1. $\log P_{x_t} = -2.4 + 2.6 \log x_t - 0.01 \log TR_t + 0.77 \log P_{D_t}$
   $(1.51)\qquad (-2.81)\qquad (4.54)$

   $+ 0.56\ P_{x_{t-1}}$
   (7.41)

Table IX.1 (Cont'd.)

Sugar (Cont'd.)

2. $\log x_t = -5.22 - 0.40 \log (P_x/P_{x_w})_t + 0.94 \log Y_{w_t} + 0.04 \log x_{t-1}$
(-0.01)(-2.56) (3.33) (2.14)

P_x = sugar price

x = volume index of sugar exports

P_{x_w} = a weighted average of export prices of the country's trading partners

Y_w = a weighted average of real incomes of the country's trading partners

---

Total Exports

1. $\log P_{x_t} = -0.04 + 1.97 \log x_t - 0.002 \log TR_t + 0.23 \log P_{D_t} + 0.17 \log P_{x_{t-1}}$
(-1.40) (2.46) (-0.01) (5.71) (4.18)

2. $\log x_t = -0.08 - 0.28 \log (P_x/P_{x_w})_t + 0.86 \log Y_{w_t} + 0.66 \log x_{t-1}$
(-3.10) (-4.20) (1.30) (4.00)

P_x = export prices

x = index volume of commodity exports

Table IX.2: Jamaica: Estimates of Supply and Demand Elasticities For Selected Exports (Equilibrium)

Bauxite/Aluminium

1. $\log P_{x_t} = -6.81 + 1.58 \log x_t - 0.56 \log TR_t + 0.48 \log P_{D_t}$
   $(-0.15)\ (4.41)\qquad (-3.11)\qquad (2.61)$

2. $\log x_t = 0.11 - 0.28 \log (P_x/P_{xw})_t + 1.47 \log Y_{w_t}$
   $(4.11)(-2.80)\qquad (5.04)$

Sugar

1. $\log P_{x_t} = -3.50 + 1.88 \log x_t + 0.29 \log TR_t + 0.16 \log P_{D_t}$
   $(-6.40)\ (2.11)\qquad (1.01)\qquad (3.51)$

2. $\log x_t = 5.0 - 0.44 \log (P_x/P_{xw})_t + 1.56 \log Y_{w_t}$
   $(7.41)(-2.90)\qquad (3.6)$

Total Exports

1. $\log P_{x_t} = -1.8 + 1.72 \log x_t - 0.33 \log TR_t + 0.41 \log P_{D_t}$
   $(-1.20)(2.86)\qquad (-2.61)\qquad (4.48)$

2. $\log x_t = 6.61 - 0.31 \log (P_x/P_{x_w})_t + 1.70 \log Y_{w_t}$
   $(0.41)(-2.16)\qquad (1.00)$

Table IX.3: Zaire: Estimates of Supply and Demand Elasticities for Selected Exports (Disequilibrium)

Copper

1. $\log P_{x_t} = \underset{(0.56)}{3.42} + \underset{(3.18)}{1.68} \log x_t + \underset{(1.06)}{0.49} \log TR_t + \underset{(1.61)}{0.86} \log P_{D_t} + \underset{(5.61)}{0.18} \log P_{x_{t-1}}$

2. $\log x_t = \underset{(0.11)}{0.72} - \underset{(-2.81)}{0.29} \log (P_x/P_{x_w})_t + \underset{(7.61)}{0.58} \log Y_{w_t} + \underset{(4.06)}{0.62} \log x_{t-1}$

P_x = copper prices

X = volume index of copper exports

P_D = domestic prices

P_{x_w} = the world price of aluminium

Y_w = index of industrial output of OCED countries

Coffee

1. $\log P_{x_t} = \underset{(2.31)(1.62)}{3.71} + \underset{(2.88)}{2.24} \log x_t + \underset{(1.78)}{0.34} \log TR_t + \underset{(3.04)}{0.48} \log P_{D_t} + 0.51 \log P_{x_{t-1}}$

Table IX.3 (Cont'd.)

Coffee (cont'd.)

2. $\log x_t = \underset{(0.91)}{0.78} - \underset{(-3.16)}{0.51}\,(P_x/P_{x_w})_t + \underset{(1.76)}{1.38}\log Y_{w_t} - \underset{(-4.21)}{0.30}\log x_{t-1}$

P_x = coffee prices

P_{x_w} = a weighted average of export prices of the country's trading partners

Y_w = a weighted average of real incomes of the country's trading partners

---

Total Exports

1. $\log P_{x_t} = \underset{(1.41)}{3.41} + \underset{(4.21)}{1.23}\log x_t + \underset{(2.86)}{0.48}\,TR_t + \underset{(1.52)}{0.44}\log P_{D_t} + \underset{(1.11)}{0.31}\log P_{x_{t-1}}$

2. $\log x_t = \underset{(3.21)}{1.61} - \underset{(-3.61)}{0.33}\,(P_x/P_{x_w}) + \underset{(2.62)}{0.73}\log Y_{w_t} + \underset{(1.41)}{0.41}\log x_{t-1}$

P_x = export prices

x = index volume of commodity exports

Table IX.4: Zaire: Estimates of Supply and Demand Elasticities For Selected Exports (Equilibrium)

Item		Formula
Copper	1.	$\log P_{x_t} = 4.60 + 1.03 \log x_t - 0.38 \log TR_t + 0.32 \log P_{D_t}$ $(1.70)\ (3.12)\qquad (-1.02)\qquad (3.41)$
	2.	$\log x_t = 0.43 - 0.38 (P_x/P_{xw})_t + 0.95 Y_{w_t}$ $(1.90)(-3.60)\qquad (7.30)$
Coffee	1.	$\log P_{x_t} = 3.70 + 2.18 \log x_t + 0.62 \log TR + 0.66 \log P_{D_t}$ $(3.18)\ (2.10)\qquad (1.03)\qquad (4.10)$
	2.	$\log x_t = 1.00 - 0.45 (P_x/P_{xw})_t + 1.25 Y_{w_t}$ $(2.07)(-3.00)\qquad (5.50)$
Total Exports	1.	$\log P_{x_t} = 3.80 + 1.22 \log x_t + 0.68 TR + 0.42 \log P_{D_t}$ $(2.13)\ (3.41)\qquad (1.01)\quad (2.18)$
	2.	$\log x_t = 4.30 - 0.40 (P_x/P_{xw})_t + 0.93 \log Y_{w_t}$ $(1.81)(-2.91)\qquad (1.41)$

Table IX.5: Jamaica and Zaire: Estimates of Import Demand Functions

---

Jamaica

Consumer Goods

$$\text{Log } m_t = \underset{(0.08)}{4.20} - \underset{(-2.20)}{0.05} \log (P_m/P_D)_t + \underset{(3.51)}{0.70} \log Y_{D_t} + \underset{(2.31)}{0.38} \log m_{t-1}$$

Raw Materials

$$\log m_t = \underset{(1.62)}{0.008} - \underset{(-2.83)}{0.37} \log (P_m/P_D)_t + \underset{(1.66)}{1.35} \log Y_{D_t} + \underset{(3.62)}{0.12} \log m_{t-1}$$

Capital Goods

$$\log m_t = \underset{(-1.80)}{-0.01} - \underset{(-1.90)}{0.52} \log (P_m/P_D)_t + \underset{(2.60)}{1.17} \log Y_{D_t} + \underset{(7.28)}{0.10} \log m_{t-1}$$

Total Imports

$$\log m_t = \underset{(0.08)}{0.09} - \underset{(-2.62)}{0.29} \log (P_m/P_D)_t + \underset{(3.03)}{1.30} \log Y_D + \underset{(2.06)}{0.19} \log m_{t-1}$$

---

where

m: volume index of imports

P_m: import prices

Y_D: domestic real income

P_D: domestic prices

Table IX.5: Cont'd.

Zaire

Consumer Goods

$$\text{Log } m_t = \underset{(0.41)}{0.81} - \underset{(-3.12)}{0.20} \log (P_m/P_D)_t + \underset{(2.06)}{1.93} \log Y_D - \underset{(-4.18)}{0.34} \log m_{t-1}$$

Raw Materials

$$\log m_t = \underset{(-1.51)}{-0.44} - \underset{(-0.32)}{0.09} \log (P_m/P_D)_t + \underset{(3.16)}{1.31} \log Y_{D_t} + \underset{(4.34)}{0.30} \log m_{t-1}$$

Capital Goods

$$\log m_t = \underset{(-2.10)}{-5.0} - \underset{(-4.12)}{0.32} \log (P_m/P_D) + \underset{(2.5)}{0.94} \log Y_{D_t} + \underset{(3.15)}{0.28} \log m_{t-1}$$

Total Imports

$$\log m_t = \underset{(-1.10)}{-0.03} - \underset{(-1.40)}{0.20} \log (P_m/P_D) + \underset{(2.81)}{1.48} \log Y_{D_t} + \underset{(4.66)}{0.21} \log m_{t-1}$$

---

where

m: volume index of imports

P_m: import prices

Y_D: domestic real income

P_D: domestic prices

Table IX.6: Price and Income Elasticities of Demand for Imports

	Elasticities			
	Price		Income	
	Long-Run	Short-Run	Long-Run	Short-Run
Jamaica				
1. Consumer Goods	-0.08	-0.05	1.12	0.70
2. Raw Materials	-0.42	-0.37	1.53[a]	1.35[a]
3. Capital Goods	-0.57[a]	-0.52[a]	1.30	1.17
4. Total Imports	-0.36	-0.29	1.60	1.30
Zaire				
1. Consumer Goods	-0.15	-0.20	1.44	1.93
2. Raw Materials	-0.13[a]	-0.09[a]	1.89	1.31
3. Capital Goods	-0.44	-0.32	1.31[a]	0.94[a]
4. Total Exports	-0.25	-0.20	1.87	1.48

[a]Indicates insignificant at the 95% level.

Table IX.7: Jamaica and Zaire: Income and Price Elasticities of Demand for Exports

Country	Elasticities				Weights[c]
	Price		Income		
	Short-Run	Long-Run	Short-Run	Long-Run	
Jamaica					
Bauxite/Aluminium	-0.30[a]	-0.28	1.55	1.47	0.85
Sugar	-0.40	-0.44	0.94	1.56	0.15
Total Exports	-0.28	-0.30	0.86[a]	1.70[a]	-
Total Exports (weighted[b])	-0.32	-0.31	1.46	1.48	-
Zaire					
Copper	-0.29	-0.38	0.58	0.95	0.90
Coffee	-0.51	-0.45	1.38	1.25	0.10
Total Exports	-0.33	-0.40	0.73	0.93	-
Total Exports (weighted[b])	-0.31	-0.39	0.66	0.98	-

[a]indicates insignificant at the 95% level

[b]calculated using the weights shown

[c]the weight is the average proportion of export earnings of each commodity, omitting other commodity exports

Table IX.8: Jamaica and Zaire: Export Supply Price Elasticities

Country	Short-Run	Long-Run	Weights
Jamaica			
Bauxite/aluminium	0.47	0.63	0.85
Sugar	0.17 [a]	0.53	0.15
Total Exports	0.42	0.58	-
Total Exports (weighted)	0.43	0.62	-
Zaire			
Copper	0.49	0.97	0.90
Coffee	0.22 [a]	0.46	0.10
Total Exports	0.56	0.82	-
Total Exports (weighted)	0.47	0.92	-

[a] indicates insignificant at the 95% level

The Degree of Pass-Through, K_x

Using our estimates of the supply and demand elasticities of exports, estimates of the possible effect of devaluation on export prices in domestic currency, can be obtained by computing the degree of pass-through, using the formula $K_x=(1-S_x/D_x)^{-1}$, where S_x and D_x are the supply and demand elasticities respectively. These computations are shown in Table IX.9. It can be seen that in all cases the

Table IX.9: Estimates of the Pass-Through

	Pass-Through	
	Short-Run	Long-Run
Jamaica		
Bauxite/Aluminium	0.38	0.31
Sugar	0.70	0.45
Total Exports	0.37	0.35
Zaire		
Copper	0.37	0.32
Coffee	0.69	0.50
Total Exports	0.37	0.33

degree of pass-through of devaluation into higher export prices in domestic currency is relatively small. This is the result of supply price elasticities in both countries, being relatively larger than demand price elasticities. Putting it a different way, the response of export supply would be relatively larger than the response of foreign

demand, causing the export prices in foreign currency to fall, and hence partly offsetting the pass-through into higher export prices in domestic currency. In both countries, the long-run estimates of K_x, are very close to those in the short-run, because there are no big differences between the equilibrium and disequilibrium elasticities. For Jamaica, the largest degree of pass-though is in the case of sugar, ranging between 45 and 70 % of the amount of devaluation. For Jamaican export in the aggregate, it is estimated that their prices in domestic currency will increase by 37 %. For Zaire, the largest degree of pass-thorugh is in the case of coffee, ranging between 50 and 69%. For Zaire's exports in the aggregate, it is estimated that export prices will increase by between 33 and 35%.

Estimates of P_D, W_1 and W_2

To estimate P_D, the elasticity of domestic resource costs to a change in the exchange rate, the results of our earlier empirical work can be used. In Chapter Six it has been shown that the short-run effect of devaluation on domestic prices is measured by b_3 for input prices, and $\alpha_2 b_3$ for wages (where b_1 measures the response of domestic prices to import prices, and α_2 measures the response of money wages to domestic prices). And that the long-run effect is measured by $b_3/(1-\alpha_2 b_1)$ for input prices, and by $\alpha_2 b_3/(1-\alpha_2 b_1)$ for wages (where b_1 measures the response of domestic prices to money wages). In Chapter Three it has been estimated that, for Jamaica $b_3=0.49$; $b_1=1.24$; and $\alpha_2=0.49$. For Zaire $b_3=0.69$; $b_1=0.48$; and $\alpha_2=0.34$. Accordingly, in the case of

Jamaica the long-run elasticity of domestic input prices is 1.24 and the long-run elasticity of wages is 1.55. The elasticity of the total domestic resource costs to devaluation is measured as a weighted average of these two elasticities, i.e., $e_{P_D}=0.34\%$[†]. In the case of Zaire, the long-run elasticity of domestic input prices is 0.82, and the long-run elasticity of wages is 0.28, and their weighted average gives a value of $P_D=0.50$. For each country, the elasticity of domestic resource cost, thus calculated, is assumed to be common for all export items. In the case of Jamaica, the weights for all export items are computed from the 1978 Social and Economic Survey. In the case of Zaire, the weights for copper exports are calculated from the 1975 Gecamines and Bank of Zaire Annual Reports.

Does Devaluation Improve Export Competitiveness and Profitability?

As shown earlier, the competitiveness of exports (defined as the foreign exchange earnings per unit of domestic resource used) will improve if:

$$w_1 K_x(1+S_x) - w_2 e_{P_m} - e_{P_D} - 1 > 0$$

The application of this criterion to the export sectors of Jamaica and Zaire is shown in Table IX.10. For each country the criterion is applied to the two major export items, and to exports in the aggregate. In making the computations, it is assumed that the elasticity of imported

[†] The weights are the proportion of non-traded goods input costs, and wages costs in total variable costs.

input prices. e_{P_m} is equal to unity[†]. The computations are based on the equilibrium estimates of K_x and S_x, and the long-run estimates of e_{P_D}. From the Table it can be seen that, in all cases, devaluation leads to a loss of foreign exchange earnings per unit of domestic resources used. In the case of Jamaica, exports in the aggregate are estimated to incur a 2.02 loss of foreign exchange per unit of domestic inputs, for each 1% devaluation. The main factors behind this are the high elasticity of domestic resource cost, the low degree of pass-through, and the small elasticity of supply. In the case of Zaire, exports in the aggregate are estimated to lose 1.13% for each 1% devaluation. Comparing the results of the two countries, it is clear that, because of their relatively low elasticity of domestic resource costs, and their relatively high export supply elasticity, the estimated loss of foreign exchange, in the case of Zairian exports, is half of that of Jamaican exports.

Given the values of all the other parameters, the supply elasticities that would have to prevail for devaluation to improve export competitiveness, are calculated. For Jamaica these are as follows: bauxite/aluminium 4.9; sugar 3.45 and total exports 4.4. For Zaire they are as follows: copper 3.07; coffee 1.75, and total exports 2.97. Clearly these elasticities are very high. Our results will be overestimates only to the extent that, K_x has been underestimated, and the inflationary effects of devaluation overestimated.

[†] See Chapter Six.

Table IX.10: Jamaica and Zaire: Measurements of the Effect of Devaluation on Export Profitability and Export Competitiveness

Exports	Supply Elasticity S_x	Pass-Through k_x	Elasticity of Import Prices e_{p_m}	Elasticity of Domestic Prices e_{p_D}	W_1	W_2	Change in Competitiveness $\dot{C}$	Change in Profitability $(\dot{C}-\dot{r})$
Jamaica								
Bauxite/Aluminium	0.63	0.31	1	1.34	1.56	0.56	-2.08	-1.08
Sugar	0.53	0.45	1	1.34	1.39	0.39	-1.60	-0.60
Total Exports	0.58	0.35	1	1.34	1.53[a]	0.53	-2.02	-1.02
Zaire								
Copper	0.47	0.32	1	0.50	1.66	0.66	-1.12	-0.12
Coffee	0.46	0.50	1	0.50	1.33[b]	0.33	-0.86	0.14
Total Exports	0.86	0.33	1	0.50	1.62[a]	0.62	-1.13	-0.13

[a] weighted average of major exports .

[b] own estimate - agricultural activities use less imported inputs compared with mining activities .

We now turn to the question of whether devaluation would put the different export activities in a higher scale of profitability, compared with the post-devaluation exchange rate. In Chapter Six it has been shown that this will be the case if $(\dot{C}-\dot{r})>0$ which implies that $w_1K_x(1+S_x)-w_2e_{P_m}-e_{P_D}>0$. It can be seen from the last column of Table IX.10, that the coefficients of competitiveness of all export activities (except coffee) deteriorate faster than the fall in the exchange rate. For Jamaica's exports in the aggregate, it is estimated that, a 1% devaluation would cause the ratio of the coefficient of competitiveness to the exchange rate, C/r , to deteriorate by 1.02%. While in the case of Zaire, it would deteriorate by 0.13%.

According to these results, devaluation in the case of Jamaica and Zaire would not only result in a loss of foreign exchange per unit of domestic resources used, but would also render the production of exports unattractive at the post-devaluation exchange rate; as the coefficient of competitiveness would deteriorate faster than the exchange rate. The exception here is Zairian coffee, where the foreign exchange earnings per unit of domestic resources used, would deteriorate, as a result of devaluation, but the production of coffee would be profitable (in the sense used by Nashashibi (1980)) at the post-devaluation exchange rate. We will now turn to examine the effect of devaluation on relative prices, and export supply, in more detail.

The Effect of Devaluation on Relative Prices

To trace the effect of devaluation on relative prices, use can be made of the graphical method employed in Chapter Six. For each export actvity, and for exports in the aggregate, the export price is plotted against import and domestic wholesale prices (measured in domestic currency).

For Jamaica the graphical data covers the period 1974:IV to 1980:IV, 12 quarters before and 19 quarters after the devaluation in the second quarter of 1977. Before considering the graphical data, it must be recalled that in the second quarter of 1977 Jamaica adopted a dual exchange rate, with a special rate which involved a 37.5% devaluation for all exports other than bauxite/aluminium, and for all imports other than essentials. In the second quarter of 1978, the basic exchange rate, which was applied to all government trasanctions, bauxite/aluminium exports, and essential imports, was devalued by 13.6%, and the special rate was devalued by 5.2%. In the second quarter of 1979 the exchange rate was unified, with a weighted overall devaluation of 15%. All devaluations were supported by anti-inflationary policies.

The different price indices in Jamaica are plotted in Figure IX.1. This shows that the period prior to the devaluation, import and domestic prices exhibited the same pattern, with import prices rising slightly slower than domestic prices. In the period after devaluation these price indices showed a marked upward trend, which continued throughout the period, with the import price index running slightly ahead of domestic prices. The observed relationship between import and domestic prices is clearly weaker than it was suggested in earlier empirical analysis. A possible explanation for this is the IMF policy condition

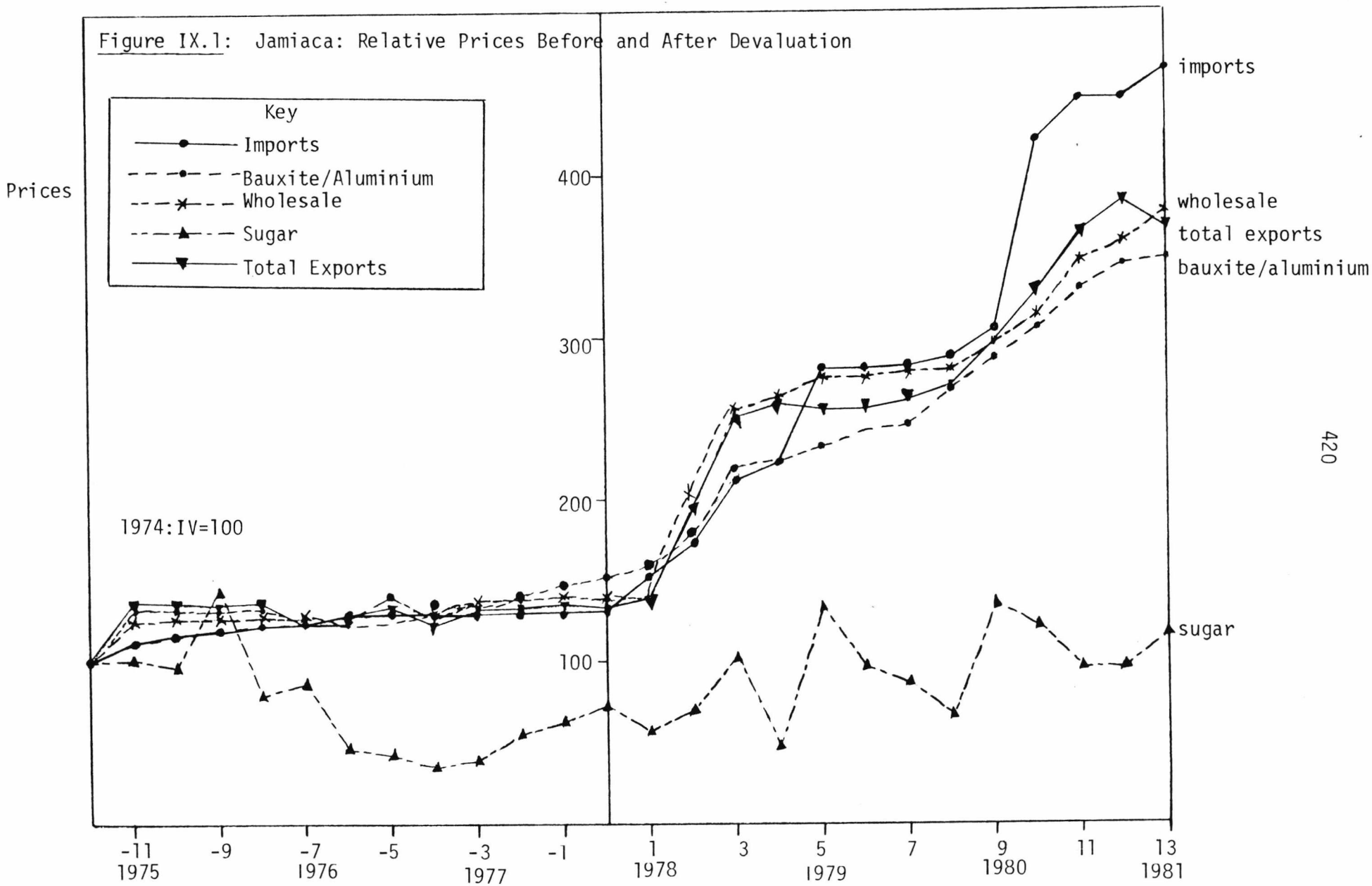


Figure IX.1: Jamiaca: Relative Prices Before and After Devaluation
Key
Imports
Bauxite/Aluminium
Wholesale
Sugar
Total Exports
Prices
1974:IV=100
400
300
200
100
imports
wholesale
total exports
bauxite/aluminium
sugar
-11
1975
-9
-7
1976
-5
-3
1977
-1
1
1978
3
5
1979
7
9
1980
11
13
1981

of 1978 which stated that monthly mini-devaluations should take place equivalent to the difference between the Jamaican rate of wage inflation and that of its main trading partners. This led to the adoption by the Manley government of severe wage policies which dampened the wage-price adjustment mechanism to import price increases. The export price index for total exports diverted away from the domestic price index during the period 1977:II-1978:IV, ran ahead of it afterwards, then fell sharply towards the end of 1980. On the whole, contrary to what should happen to make the production of exports more attractive, the increase in domestic prices in the period after devaluation was greater than that of export prices.

On the assumption that the inflation rate of each price index would have remained the same in the absence of devaluation, the devaluation policy would have added 40% to import prices, 32% to domestic prices, and 18.9% to export prices in the aggregate. During the period considered the weighted average devaluation was 46%. This suggests that import prices had risen by 89% of the amount of devaluation, while domestic and export prices had risen by 70% and 41% respectively (see Table IX.11).

The increase in export prices attributed to devaluation, if expressed as a proportion of the changes in exchange rate, gives a crude measure of the degree of pass-through. This reveals that, in the case of bauxite exports, and exports in the aggregate, the crude estimates of the pass-through are very close to those obtained from earlier regression analysis. The exception here is sugar where the crude estimate exceeded, by far, the regression estimate. This might be due to the deterioration in sugar world prices (in the period before devalaution) as a result of a general weakness in the sugar market, and some 18% increase in world prices (in the period after) as the sugar market strengthened.

Table IX.11: Jamaica: Trend Rates of Growth of Import Prices, Domestic Prices and Export Prices Before and After Devaluation

	Trend Growth % Before	Trend Growth % After	Difference	Difference in Trend as a % of Devaluation
Import Prices	8.0	49.0	41.0	0.89
Domestic Prices	10.0	42.0	32.0	0.70
Export Prices				
Sugar	-0.70	37.0	37.7	0.82
Bauxite/aluminium[a]	12.0	30.1	18.1	0.39
Total Exports	10.9	29.8	18.9	0.41

[a]Weighted average of bauxite and aluminium prices

In the case of Zaire, the graphical analysis concentrates on the behaviour of prices after devaluation, covering the period 1975:III-1982:II. The period before devaluation was excluded from the anlaysis so as to avoid dealing with the sharp fluctuations in prices in the period immediately following the oil crisis of 1973. The period considered includes a major devaluation in the first quarter of 1976 and six mini-devaluations in 1978:IV; 1979:I; 1979:III, 1980:I, 1980:II and 1981:I. Figure IX.2,which shows the different price indices, suggests a rather strong relationship between import and domestic prices. During the period, import prices increased by an average of 62% per annum, while domestic prices increased by an average 55%. This suggests that domestic prices on average, increased by 89% of the rise in import prices, which is very close to our earlier empirical results. Examining the behaviour of export prices of individual commodities, it is evident that only in the case of coffee did prices increase faster than the general level of domestic prices. For exports in the aggregate, export prices increased by an average of 8%.

In general, the results of this analysis suggests that devaluation, in the case of Jamaica and Zaire, has caused large deterioration in the terms of trade, as import prices increased faster than export prices. It also indicates that, devaluation offered no extra incentives for exporting as domestic prices increased faster than export prices.

The Effect of Devaluation on Export Supply

To trace the effect of devaluation on export supply, the "what-would' have-been" method used in the case of The Sudan is used. This method

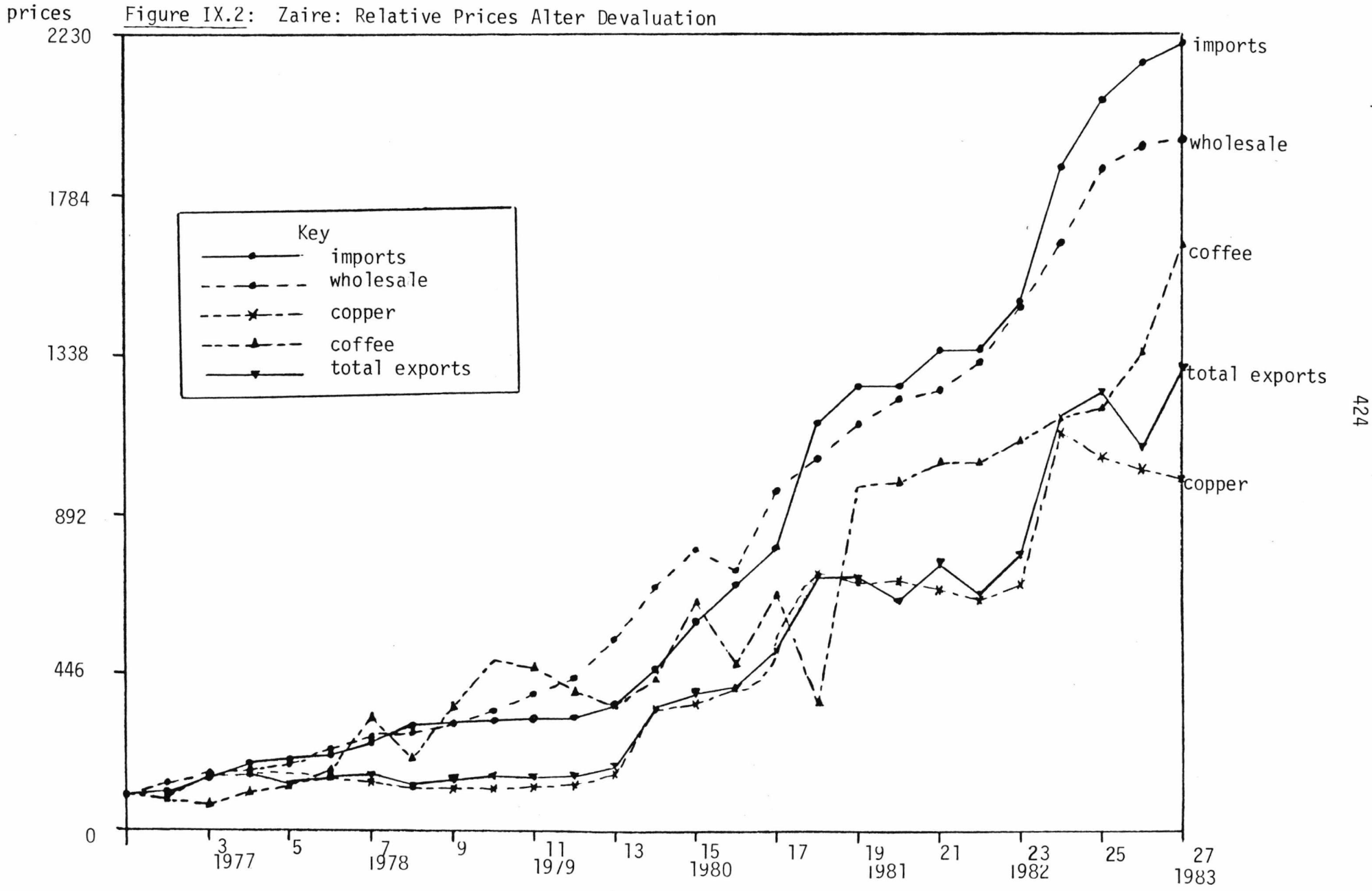


Figure IX.2: Zaire: Relative Prices Alter Devaluation

quantifies export supply in the absence of devaluation, using the parameter estimates of the equilibrium model reported earlier, and ascribes the difference between the actual performance of export supply and the hypothetical performance, to the effect of devaluation. The results are presented by plotting the actual volume of export supply against the hypothetical supply (see Figures IX.3-IX.8). The figures show that, in all cases, the predicted export volume consistently exceeded the actual volume, suggesting that devaluation had adversely affected export supply.

However, as was noted before, the above method is criticised on the assumptions made, and hence the difficulty of estimating "what-would-have-been" with great accuracy. For this reason an additional "before-and-after" test was conducted. In the case of Jamaica this method compared the production of exportables in the three years before devaluation with the production in the five years after. The application of this test to the major export items is shown in Table IX.12. The Table shows that sugar production increased substantially in the first year after devaluation, then remained unchanged in the second year after. Between 1978 and 1981 sugar output deteriorated sharply, recording an average annual growth rate of -14%. This deterioration in output was attributed partly to the occurrence of "smut" and "rust" diseases which affected 30,000 acres, and partly due to the declining production efficiency of the operating sugar factories.

The production of aluminium in the three years before devaluation deteriorated by an average of 20%, while in the five years after it increased marginally by an average of 9%. The production of bauxite

Figure IX.3: Jamaica: Sugar: Actual and Predicted Volume

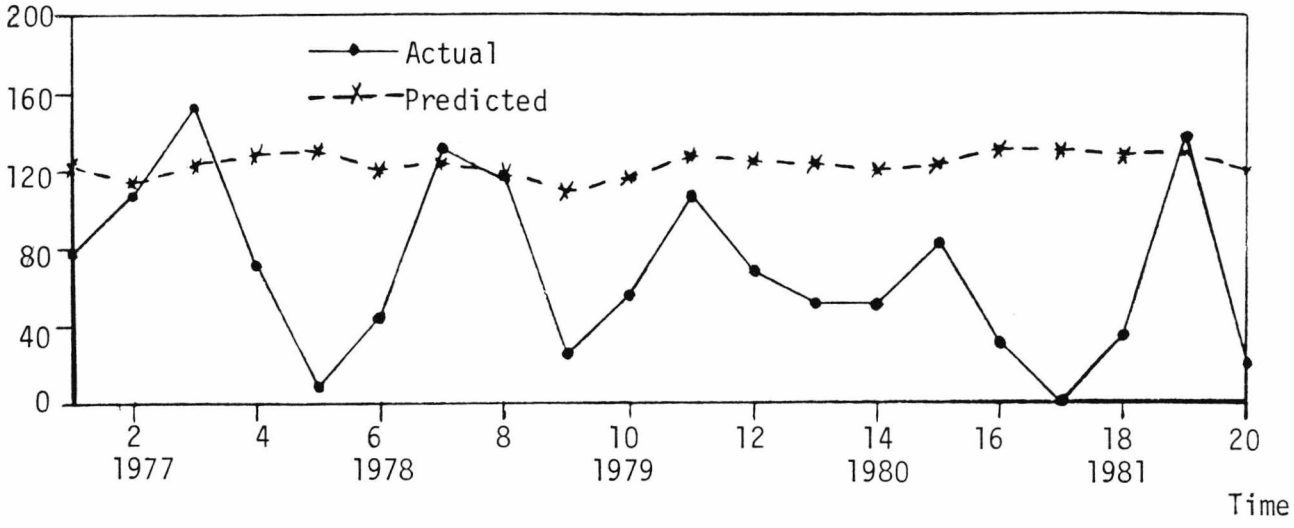


Figure IX.4: Jamaica: Bauxite/Aluminium: Actual and Predicted Volume

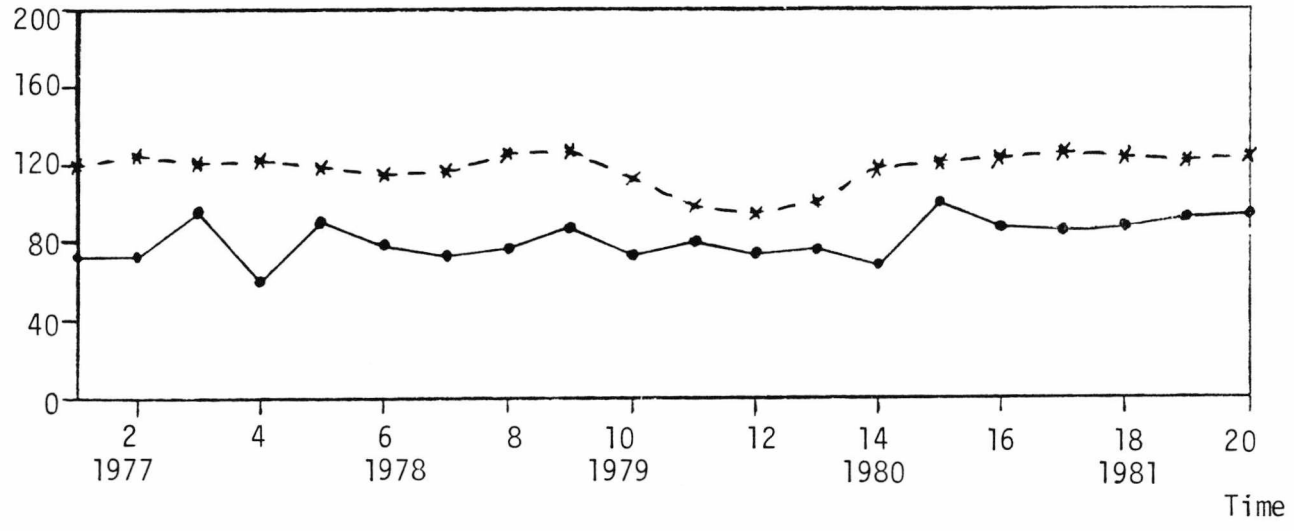


Figure IX.5: Jamaica: Total Exports: Actual and Predicted

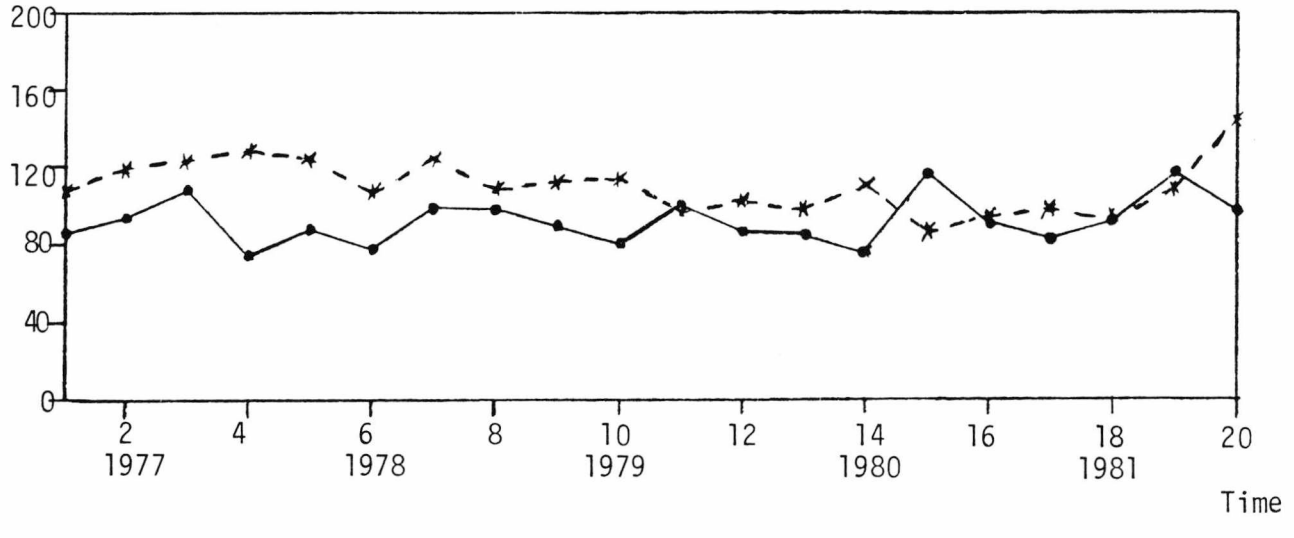


Figure IX.6: Zaire: Copper: Actual and Predicted Volume

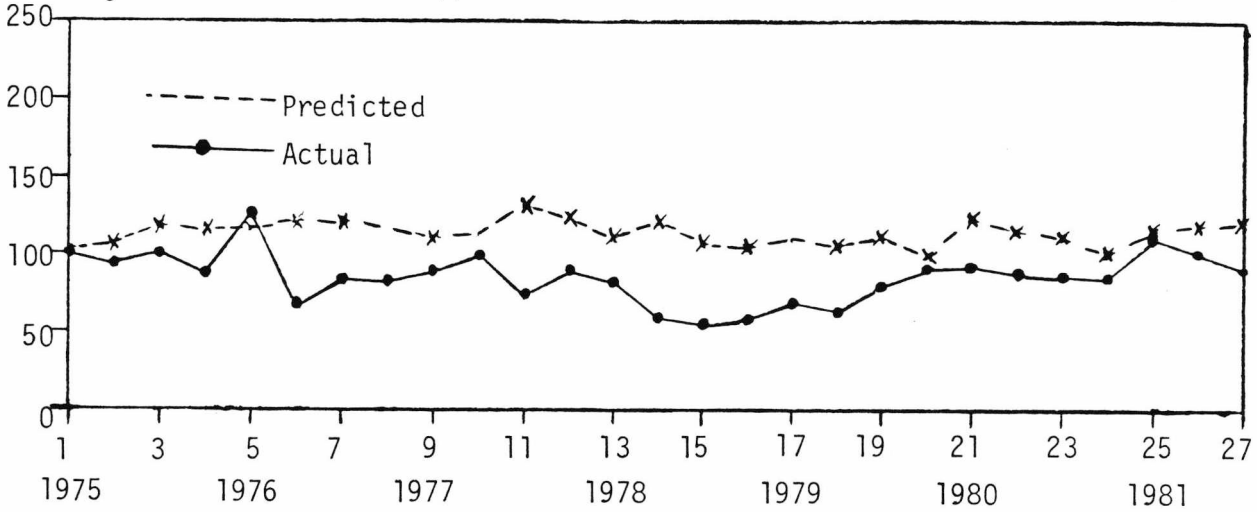


Figure IX.7: Ziare: Coffe: Actual and Predicted Volume

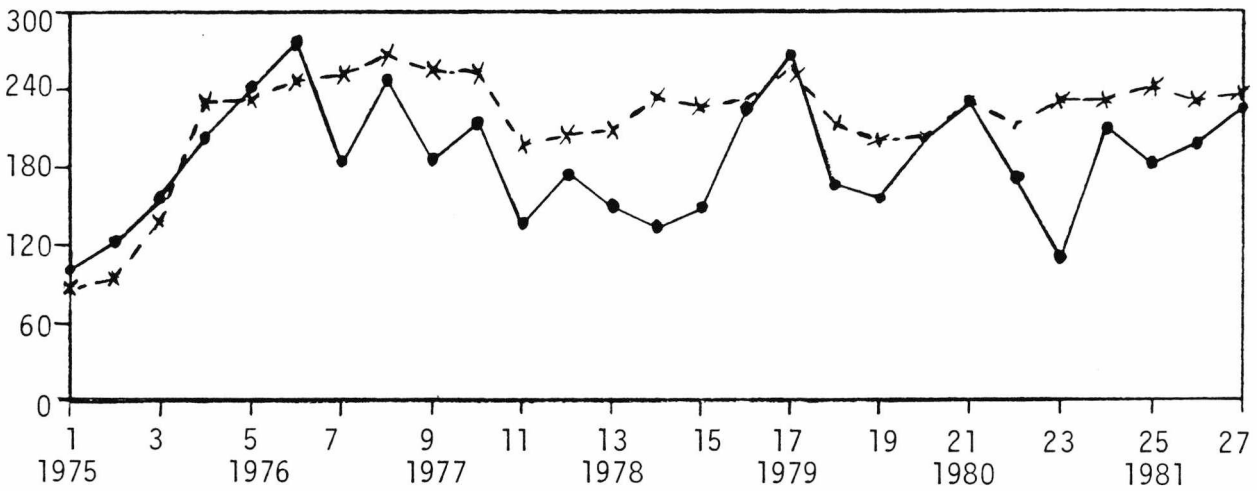


Figure IX.8: Zaire: Total Exports: Actual and Predicted Volume

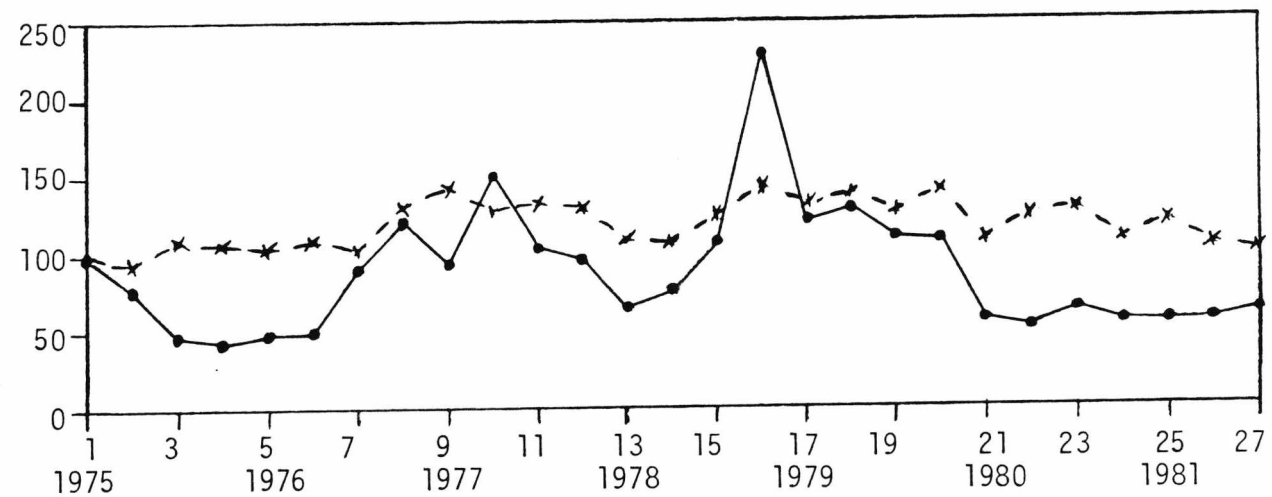


Table IX.12: Jamaica: Production of Major Exports Before and After Devaluation

	Before			After				
	1974	1975	1976	1977	1978	1979	1980	1981
Output (thousand metric tons)								
Sugar	367	355	357	425	425	388	281	265
Aluminium	2,700	2,336	1,644	2,048	2,111	2,039	2,323	2,515
Bauxite	7,795	11,380	10,296	11,424	11,736	11,877	12,649	12,485
Total Exports[a]	100	82.8	67.5	75	76.6	73.3	75.8	76.7
Annual Growth (%)								
Sugar	2.9	-3.2	0.56	19.3	0.0	-8.7	-27.5	-5.8
Aluminium	-15.6	-13.5	-29.6	24.5	3.1	-3.4	13.9	8.3
Bauxite	-32.2	-31.5	-9.5	11.1	2.6	1.2	6.5	-1.3
(Bauxite/Aluminium)	-19.1	-19.5	-21.6	18.2	3.9	-2.0	8.2	3.3
Total Exports	-12.1	-17.3	-18.5	11.1	2.1	-4.3	3.4	1.2

[a]Volume index 1974=100

exhibited the same pattern deteriorating by an average of 24% in the period before, and improving marginally (by an average of 4%) in the period after. In the light of these before and after comparisons it might be tempting to conclude that devaluation had a favourable effect on the production of bauxite and aluminium. Such a conclusion would be misleading not only because the marginal improvement in production occurred at a time when the export/domestic price ratio was declining but also because it ignores the deliberate cut-down in demand and production by the American companies and their Jamaican subsidiaries . This was reflected as a reduction in the operating rates of the four major American companies from 86% in 1973 to an average of 72% in 1976. In the five years after the IMF intervention in 1977, the American companies increased their operating rate to 82%.

Given the large weight of bauxite/aluminium in total exports the production of exportables in the aggregate exhibited a similar pattern declining in the period before by an average of 8%, while increasing slightly in the period after by an average of 3%. However, the average level of total exports in the five years after devaluation is some 9% below its average level in the three years before.

In the case of Zaire, the production of copper, coffee and total exports in the three years before devaluation, is compared with the production in the seven years after (Table IX.13). It is clear from the table that coffee output was volatile both before and after devaluation. In 1975 there was a large drop in output due to weather and labour problems which reduced yields. In the first year after devaluation (1976), output reached a record level, 71.2% above the depressed level of 1975. This increase in output was associated with

Table IX.13: Zaire: Production of Major Exports Before and After Devaluation

	Before			After					
	1973	1974	1975	1976	1977	1978	1979	1980	1981
Output (thousand metric tons)									
Coffee[a]	68	79	59	101	61.5	79	60.4	73	65.5
Copper	654	908	473	516	402	431	300	414	459
Toal Exports[b]									
Annual Growth (%)									
Coffee	-8.9	16.2	-25.0	71.2	-39.0	28.4	-24.0	21.0	-11.0
Copper	3.7	38.8	-48.0	9.0	-22.0	7.2	-30.0	38.0	10.9
Total Exports									

[a] includes Robusta and Arabica coffee varieties

[b] volume index

a large improvement in coffee prices relative to domestic prices. In 1978 while relative prices of coffee continued to rise output dropped by 39%. This was said to be due to labour problems which affected yields. The fluctuation in output continued throughout the period 1978-1981.

In the first year following devaluation copper output increased marginally, 9% above its depressed level in 1975. In the second year after, output dropped by 22%. This was partly ascribed to the 1977 Civil war which affected economic activity in the copper zone, and partly due to shortages of imported inputs. In 1979, production recorded its lowest ever level, because of severe shortage of imported materials and labour problems. Over the entire period after devaluation copper output averaged 360 thousand metric tons compared with an average of 578 thousand in the three years before.

The preceding tests give no support to the idea that devaluation by increasing price incentive, stimulates the production of exports. The pattern of output movements is summarized in Figure IX.9 for Jamaica, and in Figure IX.10 for Zaire. The production of sugar in Jamaica declined sharply after devaluation despite the improvement in its export to domestic price ratio. Also the production of coffee in Zaire fluctuated independently of movements in coffee relative prices. The marginal improvement in bauxite/aluminium production in Jamaica seem to have more to do with power-play by the North American companies than with changes in the annual foreign price of the Jamaican dollar. Copper production in Zaire deteriorated in the period after devaluation to an average level 11% below that in the crisis year of 1975.

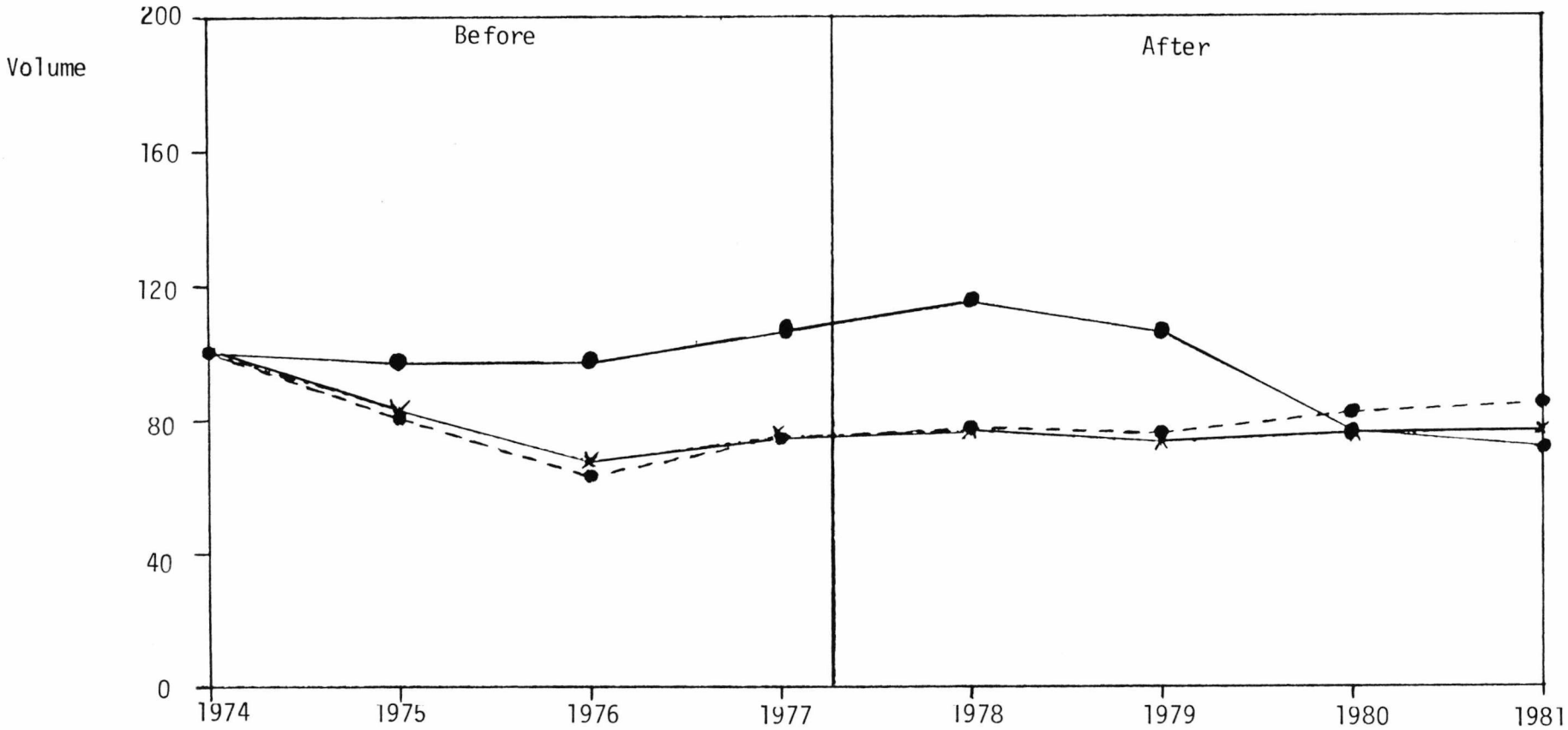
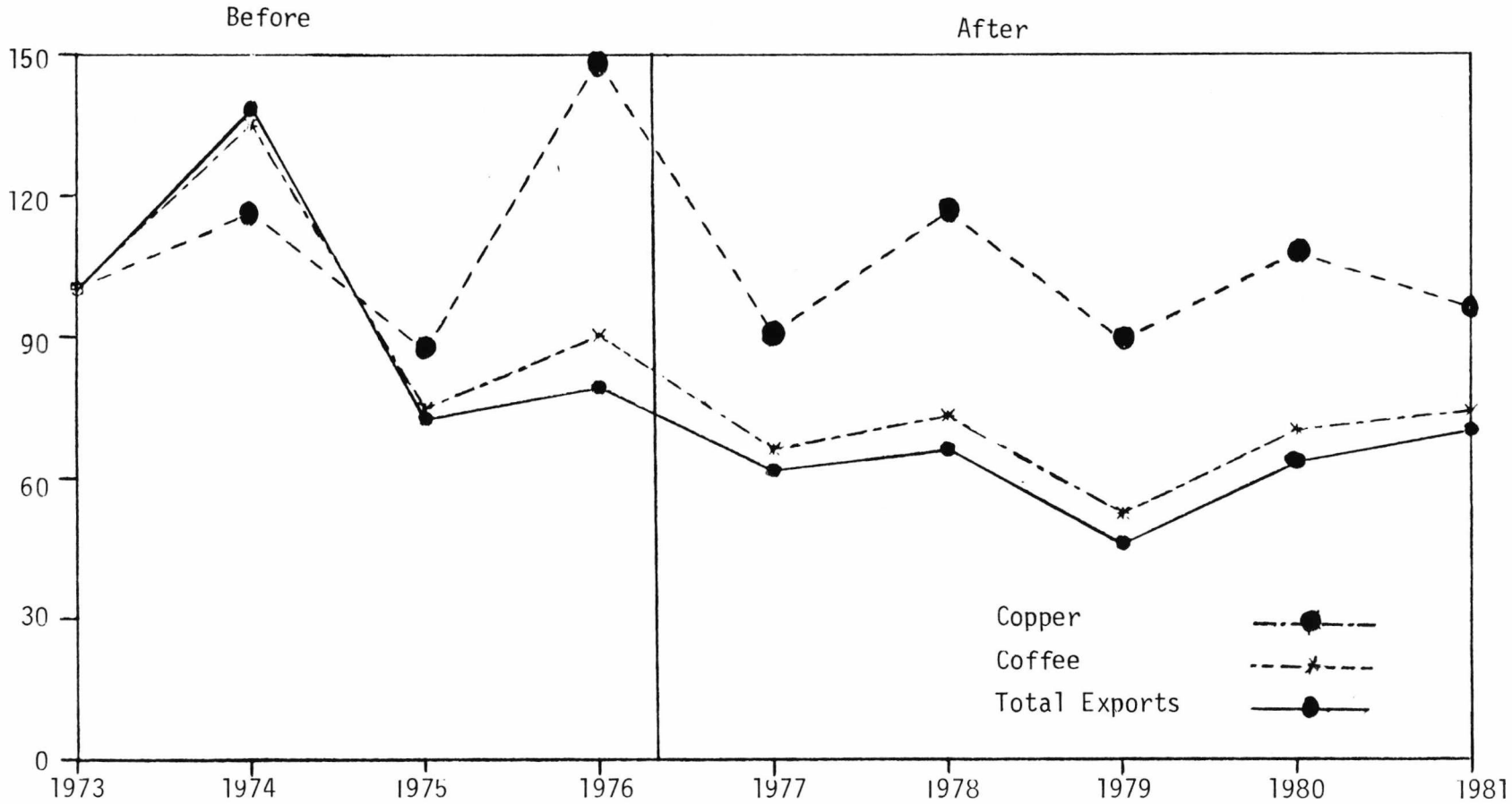


Figure IX.9: Jamaica: Production Before and After Devaluation

Figure IX.10: Zaire: production Before and After Devaluation



Devaluation and the Balance of Payments

Tn the previous section it was shown that devaluation had no favourable effect on export production. As pointed out before, the success of devaluation ought to be judged not by its effect on export supply alone, but rather by its effect on the balance of payments. Viewing it from the supply side, equation (6.18) gives the condition under which devaluation will improve the balance of payments. According to this equation the balance of payments will improve if the sum of the terms of trade effect; the export supply effect; the price effect on the demand for imports; and the income effect on the demand for imports is positive. That is $\dot{B}>0$ if:

$$[(K_x-1) + S_x(K_x- P_D) + \psi(1-f_D) - \pi y] > 0$$

Our preceding analysis provides us with all the parameters required for the application of this criteria except f_D and y. Ideally, f_D measures the responsiveness of the price of import substitutes with respect to a change in the exchange rate. On the assumption that this elasticity will be of the same magnitude as the elasticity of the general domestic price level to a change in the exchange rate, our estimates of Chapter Three can be used as a measure of f_D. As noted earlier, it has not been possible to design a method that can estimate y (the elasticity of real domestic income with respect to a change in exchange rate) with great accuracy. For this reason equation (6.18) will first be fitted assuming that real domestic income will not be affected

by devaluation, i.e. $y=0$. The results can then be used to compute (given the value of the income elasticity of demand for imports) the reduction in real income that would have to prevail for devaluation to improve the balance of payments, or conversely, the maximum increase in real income that would have to be observed, beyond which the balance of payments would deteriorate.

For each country the equation is fitted for both the short and long-runs. For the short-run disequilibrium estimates of K_X and S_X for total exports, together with short-run estimates of f_D and e_{P_D} are used. For the long-run equilibrium estimates of K_X and S_X together with long-run estimates of f_D and e_{P_D} are used. The parameter estimates are listed in Table IX.14, while the results are listed in Table IX.15.

Examining first the result for Jamaica, the table shows that in the short-run the terms of trade effect is negative and large, amounting to -0.65%, as a result of a 1% devaluation. The export supply effect is also negative as the increase in domestic prices exceeded that of export prices. The price effect on the demand for imports show that devaluation offered a relatively large price incentive to shift consumption away from foreign goods. But, as the demand for foreign goods is price inelastic, this effect is favourable but very small. When these effects are put together, the balance of payments (defined as the ratio of exports to imports) is estimated to deteriroate by 0.79% for a 1% devaluation. In the long-run the terms of trade effect and the export supply effect are negative. The price effect on the demand for imports is also negative, as the increase in domestic prices exceeded that of import prices. As a result the balance of payments is estimated to deteriorate by 1.24%.

Table IX.14: Jamaica and Zaire: Parameter Estimates for the Application of Equation (6.18)

Elasticities	Jamaica		Zaire	
	Short-Run	Long-Run	Short-Run	Long-Run
K_x	0.38	0.35	0.37	0.33
S_x	0.51	0.58	0.61	0.82
e_{P_D}	1.02	1.3	0.41	0.50
f_D	0.49	1.25	0.69	0.82
ψ	-0.29	-0.36	-0.25	-0.20
π	1.30	1.60	1.48	1.87
y	0.0	0.0	0.0	0.0

Table IX.15: Jamaica and Zaire: Devaluation and the Balance of Payments: Applications of Equation (6.18)

	Terms of Trade Effect (K_X-1)	Export Supply Effect $S_X(K_X-e_{P_D})$	Price Effect on Import Demand $\psi(1-f_D)$	Income Effect on Import Demand $-\pi y$	$\dot{B}/\dot{r}$
Jamaica					
Short-Run	-0.65	0.51 (-0.64)	0.36 (0.51)	-1.30 (0.0)	-0.79
Long-Run	-0.65	0.58 (-0.90)	0.29 (-0.25)	-1.60 (0.0)	-1.24
Zaire					
Short-Run	-0.65	0.67 (-0.04)	0.20 (0.31)	-1.48 (0.0)	-0.62
Long-Run	-0.67	0.82 (-0.17)	0.25 (0.18)	-1.87 (0.0)	-0.76

In the case of Zaire, the terms of trade is estimated to deteriorate by between 0.65 and 0.67%, for a 1% devaluation in the short- and long-run respectively. Also the ratio of export to domestic prices is estimated to deteriorate by between 0.04 and 0.17%, resulting in an adverse export supply effect. The estimated price effect, in both the short and the long-run, is favourable, but very minute. Accordingly, the balance of payments is estimated to deteriorate by between 0.62 and 0.76% for each 1% devaluation.

These results show that devaluation adversely affected the balance of payments of the two countries under investigation. But these results are based on the assumption that the elasticity of real domestic income, with respect to a change in the exchange rate, is zero. By reducing real domestic income, devaluation might reduce the demand for imports sufficiently enought to improve the balance of payments. In the case of Jamaica it is estimated (given the values of all other parameters) that real domestic income would have to fall by between 0.62 and 0.81% as a result of each 1% devaluation, for the balance of payments to improve. This suggests that the 46% devaluation which Jamaica undertook in 1977/78 would have to cause real income to deteriorate by 28 to 37%. In the case of Zaire real income would have to deteriorate by between 0.42 and 0.47% implying that the 42% devaluation which the country undertook in 1976 would have to cause real income to deteriorate by between 17 and 20%, for the balance of payments to improve. These, if compared with the actual deterioration in real income, in the course of the four years following devaluation,

which amounted to a total of 8% in the case of Jamaica, and 9% in the case of Zaire[†], suggest that, even when the income effect on the demand for imports is taken into account, the balance of payments of both countries probably deteriorated as a result of devaluation.

Conclusion

The preceding analysis has shown that, devaluation in the case of Jamaica and Zaire, was neither successful in increasing the foreign exchange earnings per unit in domestic resources used in the export sector, nor in improving the profitability of exports. Devaluation had no appreciable effect on export volume; it caused the terms of trade to fall, and the balance of payments to deteriorate.

[†] The total rates of growth are calculated by adding up annual percentage changes in real income.

SUMMARY AND CONCLUSIONS

The purpose of this study has been to examine the IMF policy of conditionality, and its effects on developing countries, with emphasis on the effects of currency devaluation. The range of policies advanced by the IMF conditionality does not seem to have changed dramatically over the years. Since its establishment, the IMF analytical methodology of balance of payments disequilibria is the distortion of the market forces and the pattern of trade, and its corrective measures have been confined to devaluation, supported by anti-inflationary policies. While the IMF policy measures remained virtually unchanged, the claimed objectives to be achieved by these measures have varied over time. In the early post-war period the reduction of the rate of inflation was the primary target of the IMF programme. In the 1960's the main objective became the restoration of a "viable" balance of payments. With the lengthening of the programme period in the late 1970's, emphasis was shifted to the promotion of the supply of exports and hence higher growth rates propelled by the export sector. At present the claimed objectives of the IMF programmes include these three dimensions: the restoration and maintenance of viability to the balance of payments in an environment of price stability and sustainable rates of economic growth.

Examining 12 developing countries it was found that, because of the large share of import costs in the final price of output, a large proportion of devaluation is transformed into higher domestic prices. On average, it was found that the share of import costs in the final price of output is 54%, and that a 1% devaluation leads to a 0.75% increase in domestic prices. This result suggests that, on average, only 25% of the relative price advantage devaluation is designed to achieve is retained. In the context of the model used, this retained price advantage is equal to the devaluation-induced deterioration in the barter terms of trade.

Viewing it from the demand side, the devaluation-induced changes in relative prices are expected to stimulate domestic production, increase the demand for exports, and reduce the demand for imports, thereby improving the balance of payments. The evidence gathered from Chapter Four where a demand-side model was developed, and tested, suggests otherwise. None of the countries in the sample (with the exception of Mexico) satisfy the simple Marshall-Lerner condition. This implies that devaluation would not improve the balance of payments through a deterioration in the terms of trade. When the residual method was used to assess the effectiveness of devaluation, the results revealed that, for the sample as a whole, the trade balance and the balance on current account deteriorated in the three years following devaluation. When the individual countries were examined it was found that in the long-run the trade balance deteriorated in all cases but Ghana, and the current account deteriorated in all cases but Ghana and The Phillipines. These results were strongly supported by the results of the "before-and-after" test.

The present IMF devaluation philosophy places heavy emphasis on the supply side of exports. According to this supply-oriented strategy, devaluation is not an instrument for increasing the demand for the country's exports, but rather to improve the competitiveness and the profitability of exports, thereby increasing their supply. To examine the effectiveness of the IMF supply side devaluation, a value-added model was developed and fitted for The Sudan, Jamaica, and Zaire. The evidence was that, in all cases, and for exports in the aggregate, because of relatively high elasticities of domestic and imported input costs, and relatively small elasticities of export supply, devaluation leads to a deterioration in competitiveness. In the case of The Sudan it is estimated that, a 1% devaluation leads to a 1.02 loss in foreign exchange earnings per unit of domestic inputs. The respective figures for Jamaica and Zaire were 2.02% and 1.13%. It was also found that, devaluation renders the production of exports unattractive at the post-devaluation exchange rate, as the coefficient of competitiveness deteriorated faster than the exchange rate. In the case of The Sudan, and for exports in the aggregate it is estimated that a 1% devaluation leads to a 0.02% deterioration in the profitability index. In the case of Jamaica and Zaire the estimated deterioration in profitability as a result of a 1% devaluation was 1.02 and 0.13% respectively.

An additional test for the IMF supply-oriented devaluation was to examine its effects on the volume of export supply following devaluation. The "what-would-have-been" test and the "before-and-after" test, which were set for this purpose, provided no support, for the IMF claim that devaluation, by improving the price incentive in the export sector, stimulates the supply of exports. In the case of The Sudan, Jamaica,

and Zaire the evidence suggests that devaluation widened the difference between domestic and export prices in favour of the former adversely affecting the supply of exports.

To assess the effectiveness of the IMF supply-oriented devaluation on the economy as a whole, as measured by its balance of payments, a supply-side balance of payments model was developed and tested for the three countries under investigation. In general, the results suggest that devaluation provides a large price incentive to shift demand away from foreign goods. But as the price elasticity of demand for foreign goods is very small, the price effect on the demand for imports could not offset the adverse terms of trade and export supply effects. In the absence of the income effect on the demand for imports, it is estimated that a 1% devaluation, in the case of The Sudan, leads to between 0.12 and 0.56% deterioration in the ratio of the money value of export earnings, to the money value of the imports. In the case of Jamaica and Zaire, it is estimated that the ratio would deteriorate by between 0.81 - 2.24%, and 0.62-0.76% (as a result of a 1% devaluation) respectively. Even if the income effect on the demand for imports is accounted for, the results suggest that the balance of payments, in all three cases, probably deteriorated as a result of devaluation.

The results of all tests conducted in the study gave very little support to the IMF claims that devaluation and its supporting policies would stimulate the supply of exports, improve the balance of payments, restore price stability, and promote economic growth. On the contrary,

in most cases under investigation, devaluation can be said to have caused export supply to deteriorate and the balance of payments to worsen. On top of this, there is evidence that devaluation and its supportive policies cause deterioration in the rate of growth of output and acceleration in the rate of inflation.

It is evident that the components of the IMF policy package designed to depress aggregate demand result in greater hardships and sufferings for the low income group. These are endured without any adequate cover of social-welfare provisions. In Chapter Three, it has been estimated that, on average, a 1% devaluation leads to a 0.41% fall in real wages. In Jamaica, during the IMF Extended Arrangement (1978-1980) real wages fell by 45%. In Zaire, during the IMF management of the country's economy (1976-1982), real wages(which in 1976, were already below their level in 1910), deteriorated further by about 180%. It is, however, not a new or a revolutionary idea that a country can achieve a balance of payments surplus at the expense of massive erosion of real wages, extremely high unemployment, and a stagnant or negative rate of growth of output. The poor countries, which are forced, by the IMF conditionality, to bear these costs, are rewarded not with external balance resulting from a sound and healthy economy, but rather with a "liberalized" exchange and trade system which is wholly dependent on the continuous flow of foreign aid.

The IMF programmes maintain the debt-dependence cycle, not only by making developing countries more dependent on imports and financial aid from the Western countries which control the IMF, but also by protecting and stimulating the economic and political interests of these countries in the developing World. In The Sudan conditions relating to the encouragement of foreign investment through the relaxation of controls,

on profit repatriation, were imposed by the IMF. In Jamaica, the IMF discredited the process of economic and social reform of the Manley government which aimed at nationalizing American bauxite companies. By tightening its conditionality terms, the IMF in Jamaica created economic and social disasters, making the Manley government unpopular, and helping to install the Seaga Conservative government which is known to encourage and protect foreign investment. In Zaire, IMF intervened directly to protect the debt-dependence cycle from collapsing. It took control over the Central Bank, and the Ministry of Finance, and it defused the contradictions which arose between foreign investors and the ruling elites.

The foreign exchange difficulties which force the poor countries to seek the IMF conditional lending, have more to do with the very same debt-dependence cycle which IMF programmes maintain. Because of their dependency on the export of a few primary products which are mainly used as inputs in the industrial West, economic growth in developing countries is to a large extent dependent on, and constrained by economic growth in the Western World. This, together with their dependency on imports of consumer goods, raw materials and capital goods, makes them vulnerable to the recessionary and inflationary effects emanating from the industrial West. Also their dependency on foreign investment in key sectors of the economy, and on foreign aid to finance their payment deficits, make them liable to economic strangulation whenever they adopt economic and social reforms unpopular to their foreign investors and foreign creditors. In Zaire, the immediate cause of the foreign exchange

crisis was the collapse of copper prices due to the recession in the industrial West. In Jamaica, the 1977 crisis had more to do with power-play by the American bauxite companies, and the curtailment of aid that followed. In The Sudan (not intending to excuse bad management) the country's dependency on foreign aid to implement its development plan, the practice of aid-tying and the consequent failure of the development effort, were among the main factors underlying the country's foreign exchange crisis in 1978.

The problem of dependency can, to some extent, be reduced by encouraging trade between developing countries, which in the long-term might enable them to gradually widen the spectrum of their commodity production, and hence increase the volume of their inter-trade. The developing countries which use the IMF conditional lending are often forced to terminate the few trade links that exist between them in the form of bilateral agreements. In the case of The Sudan, for example the IMF conditions included the termination of the trade agreement with Egypt. In the case of Zaire, the IMF conditions included the termination of the trade agreements with Uganda, Rwanda and Burundi.

There was a time when some economists argued for an international monetary institution which acts as a Central Bank for all national Central Banks. Those economists truly believed that such an institution would be impartial, and politically and ideologically neutral. The present IMF can hardly be so described. A comparison between the Fund's treatment of the Manley government in Jamaica on the one hand, and its treatment of the government of The Sudan and the government of Zaire on the other, illustrates the Fund's bias. The IMF has a clear monetarist ideology, based on the belief that the free price mechanism is superior to government intervention, planning and controls. It is from this

perspective that the IMF approaches the problems of balance of payments adjustment, and economic development.

The Fund's role,as an instrument to advance and protect the political and economic intersts of some rich nations; its partiality and bias, are logical outcomes of the power structure within the Fund. This study made no attempt to discuss the various schemes proposed to reform the IMF. This is not only because the subject is not within the scope of the study, but also because we hold the view that introducing cosmetic changes,while leaving the power structure within the IMF intact (which characterises most proposals of reform), will leave the problem unsolved. In the present international economic and political setting, it is difficult to conceive of creating an international monetary institution which is impartial and ideologically neutral.

REFERENCES

Aghevli, B. B. and Khan, M. S. (1978) "Government Deficits and the Inflationary Process in Developing Countries" IMF Staff Papers, Vol.25, No.3, Sept.

Alexander, S. (1952) "Effects of a Devaluation on a Trade Balance", IMF Staff Papers, April.

Alexander, S. (1959) "Effects of Devaluation: A Simplified Synthesis of Elasticities and Absorption Approaches", American Economic Review, March.

Ali, A. A. G. and Abdul Satar, H. (1980) "On Production Relations in Sudanese Irrigated Agriculture", (Mimeograph, University of Gezira) June.

Anstey, R. (1966) King Leopold's Legacy, the Congo Under Belgian Rule 1908-1960, (Oxford University Press)

Argy, Victor (1981) The Postwar International Money Crisis: An Analysis, (George Allen and Unwin)

Ball, R. D., Burns, T. and Laury, J. S. (1977) "The Role of Exchange Rate Changes in Balance of Payments Adjustment: The U.K. Case" Economic Journal, March.

Bird, G. (1978) The International Monetary System and the Less Developed Countries (MacMillan)

Bird, G. (1979) "IMF Quotas, Conditionality and the Developing Countries", ODI Review

Bird, G. (1980) "Commerical Borrowing by Developing Countries", Third World Quarterly, April.

Bird, G. (1981a) "The IMF and the Developing Countries: Evolving Relations, Use of Resources and the Debate Over Conditionality", ODI Working Paper, No.2, March.

Bird, G. (1981b) "Financial Flows to Developing Countries: The Role of the IMF", British Journal of International Studies.

Bonnick, G. (1980) The Experience of Jamaica in the Dell Report, The Balance of Payments Adjustment Process in Developing Countries, Vol.1, (UNCTAD, MFD/TA15)

Branson, W. H. (1972) "The Trade Effects of the 1971 Currency Realignment" Brooking Papers on Economic Activity No.1.

Brittain, B. W. H. (1977) "Developing Countries External Debt and Private Banks", Banca Nazionale del Lavoro Quarterly Review, No.123, December.

Brooke, M. Z. and Remmer. H. L. (1971) The Strategy of the Multinational Enterprise, (Longmans).

Brown, A. J. (1942) "Trade Balances and Exchange Stability", Oxford Economic Papers, April.

Buira, A. (1983) "IMF Financial Programs and Conditionality", Journal of Development Economics, February/April.

Clarke, P. (1977) "Will the Banks and the Fund Make an Example of Turkey?" Euromoney, September.

Day, W. H. L. (1979) "Domestic Credit and Money Ceilings Under Alternative Exchange Rate Regimes", IMF Staff Papers, Vol.26, No.3, September.

Dell, S. (1981) "On Being Grandmotherly: The Evolution of IMF Conditionality", Essays in International Finance, No.144, (Princeton University) October.

Dell, S. (1982) "Stabilization, the Political Economy of Overkill", World Development, August.

Dell, S. and Lawrence, R. (1980) The Balance of Payments Adjustment Process in Developing Countries (Pergaman Press).

Donovan, D. (1981) "Real Responses Associated with Exchange Rate Action in Selected Upper Credit Tranche Stabilization Programs", IMF Staff Papers, December.

Dornbusch, R. (1973) "Currency Depreciation Hoarding and Relative Prices", Journal of Political Economy, 81 No.4, July/August.

Dorrance, G. S. (1965) "Rapid Inflation and International Payments", Finance and Development, Vol.11, No.2, June.

Dutton, D. S. (1971) "A Model of Self-Generating Inflation", Journal of Money Credit and Banking, May.

Edward, S. M. and Robert, E. A. (1973) The World Bank Since Bretton Woods, (The Brooking Institution, Washington D.C.).

El Hassan, A. M. (1978) "An Evaluation of the Adjustment in the Exchange Rate of the Sudanese Pound", (a paper submitted to the Consulting Panel constituted by the Minister of Finance) March.

Fleming, J. M. (1964) The International Monetary Fund, its Form and Functions, (Washington D.C., International Monetary Fund).

Frenkel, J. and Rodriguez, C. (1975) "Portfolio Equilibrium and the Balance of Payments: A Monetary Approach", American Economic Review, 65, No.4, September.

Gosovic, B. (1972) UNCTAD: Compromise and Conflict: The Third World Quest of an Equitable World Order Through the United Nations (Leiden: A. W. Sijthoff, 1972).

Gerster, R. (1982) "The IMF and Basic Needs Conditionality", Journal of World Trade Law, December.

Girvan, N. and Bernal, R. (1982) "The IMF and the Foreclosure of Development Options - the Case of Jamaica", Monthly Review, Vol.33, No.9 (University of West Indies, Jamaica).

Goldstein, M. (1974) "The Effect of Exchange Rate Changes on Wages and Prices in the U.K.: An Empirical Study", IMF Staff Papers, November.

Goldstein, M. and Khan, M. S. (1978) "The Supply and Demand for Exports: A Simultaneous Approach", Review of Economics and Statistics, May.

Gran, G. (1976) "Policy Making and Historic Process: Zaire Permanent Development Crisis" Annual Meetings, (African Studies Assocation Boston) November.

Guitian, M. (1981) "Fund Conditionality and the International Adjustment Process", Finance and Development, Vol.18, No.2, June.

Hakim, O. (1978) "The Revision of Agricultural Production Relations in the Sudan", (Ministry of Agriculture, Food and Natural Resources), (in Arabic).

Harberger, A. (1950) "Currency Depreciation, Income and the Balance of Trade", Journal of Political Economy, February.

Hoftman, M. (1968) "The Scaffolding of Aid", Finance and Development, Vol.5, No.4, December.

Horsefield, J. K. (1969) The International Monetary Fund 1945-1965, Vol.1 (IMF, Washington).

Host-Madsen, P. (1966) "What Does it Mean: A Deficit in the Balance of Payments", Finance and Development, Vol.3, No.3.

International Monetary Fund (1977) The Monetary Approach to the Balance of Payments (IMF, Washington).

Iyoha, M. A. (1973) "Inflation and "Openness" in Less Developed Economies: A Cross-Country Analysis", Economic Development and Cultural Change, October.

Jeker, R. M. (1980) "Conditionality and Stand-By Credits of the International Monetary Fund and the Less Developed Countries", Aussenwirtschaft (Zurich), March.

Johnson, H. G. (1958) "Towards a General Theory of the Balance of Payments", in International Trade and Economic Growth (London, Allen and Unwin).

Johnson, O. and Salop, J. (1980) "Distributional Aspects of Stabilization Programs in Developing Countries", IMF Staff Papers, vol.27, March.

Kapur, B. (1976) "Alternative Stablization Policies for Less Developed Countries", Journal of Political Economy, Vol.84, No.4, Part 1, August.

Katseli, L. T. (1983) "Devaluation: A Critical Appraisal of the IMF's Policy Prescriptions", American Economic Review, May.

Kementa, J. (1971) Elements of Econometrics, (New York, MacMillan).

Killick, T. (1981a) "Extent, Causes, and Consequences of Disequilibria in Developing Countries", ODI Working Paper No.1, March.

Killick, T. (1981b) "IMF Stabilization Programmes", ODI, Working Paper No.6, September.

Killick, T. (1982a) "The Impact of IMF Stabilization Programmes in Developing Countries", ODI Working Paper No.7, March.

Killick, T. (ed.) (1982b) Adjustment and Financing in the Developing World, International Monetary Fund and Overseas Development Institute (Washington, London).

Killick, T. and Chapman, M. (1982) "Much Ado About Nothing? Testing the Impact of the IMF Stabilization Programmes in Developing Countries", ODI (unpublished).

Kincaid, G. R. (1980) "Funds Assistance to Jamaica Has Sought to Check Decline and Restore Economic Growth", IMF Survey, December.

Kincaid, G. R. (1981) "Conditionality and the Use of Fund Resources: Jamaica", Finance and Development, Vol.18, No.2, June.

Kranser, S. D. (1968) "The IMF and the Third World", International Organization, Summer.

Krueger, A. O. (1978) Foreign Trade Regimes and Economic Development: Liberalization Attempts and Consequences, Ballinger Co., Cambridge Mass (Harvard University Press).

Lieftinck, P. (1964) "Monetary Policy and Economic Development", Finance and Development, Vol.1, No.3, December.

Lipsey, R. G. and Parkin, J. M. (1970) "Incomes Policy: A Re-Appraisal", Economica, Vol.37, May.

Machlup, F. (1956) "The Terms of Trade Effects of Devaluation Upon Real Income and the Balance of Trade", Kyklos, Fasc-4.

MacLeod, A., Meynell, C. and Nevans, R. (1970) "The Sick Men of the Euromarkets", Euromoney, March.

Maynard, G. W. and Van Rijkegham, W. "Stabilization Policy in an Inflationary Economy - Argentina", in Papanek, G. (ed.) (1968), Development Policy in Theory and Practice, (Harvard University Press).

Miles, M. A. (1978) Devaluation: The Trade Balance, and the Balance of Payments, Business, Economics and Finance Vol.11, (Marcel Dekker).

Moggridge, D. (ed.) (1980) The Collected Writings of John Maynard Keynes, Vols. 25 and 26 (Royal Economic Society, Published in the US and Canada by Cambridge University Press, Elsewhere by MacMillan).

Nashashibi, K. (1980) "A Supply Framework for Exchange Reform in Developing Countries: The Experience of Sudan", IMF Staff Papers, Vol.27, No.1, March.

Omvedt, G. (1982) "India, the IMF and Imperialism Today", Journal of Contemporary Asia, Vol.12, No.2.

Officer, H. L. (1976) "The Purchasing Power Parity Theory of Exchange Rates: A Review Article", IMF Staff Papers, Vol.23, March.

Polak, J. J. 91968) "Have Economists Said Their Final Word in the Fight Against Inflation?", Finance and Development, Vol.5, No.3.

Porzecanski, A. C. (1978) "A Comparative Study of Exchange Rate Policy Under Inflation", Journal of Developing Areas.

Peemans, J. (1975) "The Social and Economic Development of Zaire Since Independence; An Histroic Outline", African Affairs, April.

Payer, C. (1974) The Debt Trap: The International Monetary Fund and the Third World (monthly Review Press, New York, London.

Reichmann, T. M. (1978) "The Fund's Conditional Assistance and the Problems of Adjustment", Finance and Development, December.

Robinson, J. (1937) "The Foreign Exchanges", in Essays in the Theory of Unemployment (Oxford, Blackwell).

Radice, H. (ed.) International Firms and ModernImperialism (Penguin).

Reichmann and Stillson (1978) "Experience with Programs of Balance of Payments: Stand-By Arrangements in the Higher Credit Tranches", IMF Staff Papers, June.

Scott, A. D. (1967) "The Role of the International Monetary Fund in Economic Development", in Columbia Essays in International Affairs: The Dean Papers, (Columbia University Press).

Solomon, R. (1983) The International Monetary System 1945-1981, (Harper and Row, New York).

Sharpley J. (1980) "Economic Management and the IMF in Jamaica: 1972-1980", DERAP Working Papers (the CHR: Michelsen Institute, Norway), September.

Stern, R. M. (1973) Balance of Payments Theory and Economic Policy, (London, Macmillan).

Salter, W. E. (1959) "Internal and External Balance: The Role of Price and Expenditure Effects", Economic Record, 35, August.

Salop, J. and Spitaller, E. (1980) "Why Does the Current Account Matter?" IMF Staff Papers, March.

Suliman, A. A. (1975) Issues in the Economic Development of the Sudan, (Khartoum University Press).

Sutton, M. "The Costs and Benefits of Stabilization Programmes", ODI, Working Paper No.3, May.

The Rist Report (1966) IBRD, Gezira Study Mission.

Triffin, R. (1960) Gold and the Dollar Crisis, New Haven, Conn. (Yale University Press).

Thirlwall, A. P. (1980) Balance of Payments Theory and the United Kingdom Experience (Macmillan).

Thirlwall, A. P. and Hussain, M. N. (1982) "The Balance of Payments Constraint, Capital Inflows and Growth Rate Differences Between Developing Countries", Oxford Economic Papers, No.3, November.

Thirlwall, A. P. (1978) Growth and Development with Special Reference to Developing Countries, (Macmillan).

The Six-Year Plan of Economic and Social Development (1977), (Ministry of National Planning, Khartoum), April, p.63.

Thirlwall, A. P. (1979b) "The Balance of Payments Constraint as an Explanation of International Growth Rate Differences", Banca Nazionale de Lavovo Quarterly Review, March.

Thirlwall, A. P. (1979a) "The Interaction Between Changes in Income and Changes in Absorption, in the Absorption Approach to the Balance of Payments", Journal of Macroeconomics.

Williamson, J. (1977) The Failure of the World Monetary Reform (1971-74), (Thomas Nelson).

Witteveen, H. J. (1978) "Funds Conditional Assistance Promotes Adjustment Programs of Members", IMF Survey, May.

Worswick, G. N. D. (1971) "Trade and Payments" in Britain's Economic Prospects, Gairneross, A., (Allen and Unwin, London).

Zenoff, D. B. and Howard, G. S. (1980) "LDC Debt; is the Sky Going to Fall?", Sloan Management Review, Vol.22, No.1.

Young, C. (1978) "Zaire: The Unending Crisis", Foreign Affairs, Vol.7, No.1.

Zellner, A. (1962) "An Efficient Method of Estimating Seemingly Unrelated Regression, and Tests for Aggregation Bias", Journal of American Statistical Associates, June pp.348-368.