



MINISTRY FOR FOREIGN AFFAIRS

**THE MACROECONOMICS
OF AID:
Case studies of four countries**

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Report 7

SASDA

**Secretariat for Analysis of
Swedish Development Assistance**

SASDA

The Secretariat for Analysis of Swedish Development Assistance

The Swedish government has appointed a committee with the task of analysing the results and effectiveness of Swedish development aid. A special Secretariat, SASDA, was set up on 1 March 1993 to carry out the work.

The Secretariat will work until the end of 1994 and will have as its main task to propose to Government suitable mechanisms for evaluations and policy analyses of Swedish aid. In its work SASDA will give priority to carrying out a set of selected studies world-wide, at country, sector and subject level and to studies of individual organisations to provide a basis for decisions on development co-operation in the future and to gain experience on how policy evaluations should be carried out. A major study concerns Sweden's co-operation with Central and Eastern Europe.

SASDA's point of departure is the aim of a better understanding of the mechanisms of development in order to enhance the results and increase the effectiveness of aid in achieving the five goals set by the Swedish parliament: increased resources, economic and social equality, economic and political independence, the democratic development of society, and the long-term management of natural resources and care of the environment.

The studies and analyses will be managed partly by the Secretariat's own staff and will include studies commissioned from different specialists in the committee's areas of priority.

The staff are :

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Dr Eva Julin	Senior Policy Analyst
Mr Enrique Ganuza	Senior Policy Analyst
Mr Per Johan Svenningsson	Senior Policy Analyst
Ms Kerstin Sandling	Assistant Secretary

Postal address:	SASDA
	P.O. Box 16418
	S-103 27 STOCKHOLM

Telephone:	+46-8 791 21 80
Telefax:	+46-8-791 21 88
Visiting address:	Klarabergsgatan 23, Stockholm



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**THE MACROECONOMICS OF AID:
CASE STUDIES OF FOUR
COUNTRIES
A REPORT FOR SAU/SASDA**

Edited by
Howard White

Institute of Social Studies
(ISS Advisory Services)
PO Box 29776
2502 LT The Hague
The Netherlands

Phone: 31 70 4260 760
Fax: 31 70 4260 770

FOREWORD

The Secretariat for Analysis of Swedish Development Assistance (SASDA) has been created to report to the Swedish Government of the effectiveness and efficiency of Swedish aid. To this end, SASDA has commissioned a number of background studies, one of which is on macroeconomic issues.

There has been a resurgence of concern in the donor community, and in Sweden in particular, about aid effectiveness. There is a long history of microeconomic evaluations of projects using established techniques. Since adjustment policies are intended to improve the macroeconomic performance of the country implementing those policies donors are turning their attention to aid's macroeconomic effects.

Aid is meant to increase growth. It should do this through supplementing domestic savings and by allowing the importation of the necessary capital goods, both of which permit an increase in investment in the recipient economy (in some situations both intermediate and consumer goods can be growth enhancing). In this respect, it is important to develop an accounting and behavioural framework for analysing how the economy adjusts to an aid inflow and to use it to examine aid's impact on imports, investment and related macroeconomic variables.

Has all the aid to date done any good? This report tries to answer this question from a macroeconomic perspective. Is it true, as some academics have claimed, that aid does not contribute to higher growth? Or was the early optimism of the two gap model a more accurate representation of aid's macroeconomic effects? This study describes the major issues in this debate. Furthermore, four different case studies are analysed, namely Tanzania, Zambia, Nicaragua and Guinea-Bissau.

This report is edited by Howard White, Institute of Social Studies, The Hague, The Netherlands, on the basis of a comprehensive research by several specialists on the subject.

The opinions and conclusions of the editor of the report are his own.

Stockholm, August 1994.

Ingemar Mundebo
Chairman

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PREFACE

This report is the summary volume for a series of country studies undertaken on behalf of SAU/SASDA on the macroeconomic effects of aid in four major recipients of Swedish aid: Guinea-Bissau, Nicaragua, Tanzania and Zambia. Each of the longer country reports is also available separately.

I would like to thank the staff of SASDA, especially Enrique Ganuza, in making this study possible. Trudi Creutzburg and Joy Misa at ISS/ISSAS helped with the production of the report.

Howard White
The Hague
August, 1994

PART I

LITERATURE REVIEW AND METHODOLOGY

PART I

LITERATURE REVIEW AND METHODOLOGY

CHAPTER 1

INTRODUCTION

1.1 Overview

Aid fatigue - particularly in Africa - is seeping through the donor community. Has all the aid to date done any good? And, if not, why go on giving it?

This report tries to answer these questions from a macroeconomic perspective. Is it true, as some academics have claimed, that aid does not contribute to higher growth? Or was the early optimism of the two gap model a more accurate representation of aid's macroeconomic effects? This chapter describes the major issues in this debate. These issues are explored more thoroughly in the remainder of Part I of this report (Chapters 2 to 4) which are a methodological survey of the literature.

Chapter 2 presents an accounting framework for the macroeconomic analysis of aid. The framework provides a useful starting point for the definition of key concepts, a review of the existing literature and to prepare the ground for the issues to be covered in the country studies. I am concerned both to show what is wrong with much existing work, and to suggest ways in which these problems might be solved: hopefully these thoughts helped guide the authors' of the country studies. Since 1980 an increasing amount of aid has been conditional upon the implementation of structural adjustment policies. Chapter 3 discusses the effects of aid-supported policies, rather than the effects of the aid monies themselves. These two effects are quite different, and there is no reason at all to expect that they will operate in the same direction. The theoretical part of the report is completed by a discussion of the differential

effects of different types of aid (Chapter 4), an important point that has been excluded from existing analyses of aid's macroeconomic impact.

Part II of the report presents the case studies: Guinea-Bissau (Chapter 5), Nicaragua (Chapter 6), Tanzania (Chapter 7) and Zambia (Chapter 8). Three of these have been prepared especially for this study. In each case a database was constructed using available national sources and, where necessary, international ones. The objective was to have consistent sets of national accounts, balance of payments and government accounts in which aid flows could be clearly identified - as demonstrated in the accounting framework of Chapter 2. Fieldwork was undertaken in each of the three countries in February/March 1994 to collect further data and hold discussions with government and donor agency officials. The exception is the Tanzanian chapter, which is based on work undertaken for a SIDA study on import support to Tanzania. The accounting framework was initially developed during the Tanzanian study. Fieldwork in Tanzania was carried out in March and August 1993. Part III (Chapter 9) pulls together the main conclusions from the country studies.

How to read this report

Different parts of this report will be of interest to different people. Those wanting a quick, relatively non-technical overview, of the main issues and the major results of our work should read Chapters 1 and 9. Although the country studies draw upon the theoretical framework laid out in Part I, each may be read in its own right (or, better still, in combination with Chapter 1). Someone more interested in methodology than the countries studied should read Chapters 2 to 4 - but also 9, to see how the approach fared in practice!

1.2 The macroeconomic analysis of aid: a review of the major issues

The macroeconomics of aid flows

Practically everything written on the macroeconomics of aid mentions a paper by Chenery and Strout (1966). In that paper the authors presented a two gap model, and this model has underpinned almost all subsequent work. Chenery and Strout were concerned to estimate the amount of external finance required by developing countries to maintain a reasonable rate of

growth. A country may need external finance to grow for two reasons: investment and imports. The two gap model is based on the Harrod-Domar equation, in which the rate of growth of an economy depends solely on the share of investment in national income and the productivity of that investment. The productivity (the incremental capital output ratio, ICOR) is held constant, so that growth is determined only by investment. Or, to put it another way, to achieve a certain rate of growth requires a given amount of investment. Now, investment is financed by savings. Suppose, however, that the required investment rate is 15 per cent and that the domestic savings ratio is only 5 per cent. The economy faces a savings gap. External finance (aid) can fill that gap (capital inflows are also called foreign savings) - so that the total savings (domestic plus foreign) are sufficient to finance the required investment.

There is a second reason why the economy may not be able to attain this required rate of investment, even if it has sufficient domestic savings. This reason is that most developing countries do not produce most the capital goods required for investment - they have to be imported using foreign exchange (forex). In any given year a country's uses of forex must equal its sources of forex - more formally, the current deficit (surplus) must equal the capital account surplus (deficit). The main source of forex is normally export earnings. Chenery and Strout said that a country faced a foreign exchange gap if its export earnings were not sufficient to cover its import requirements. Once again external finance can fill this gap by making additional forex available.

Thus investment can be constrained either by a shortage of domestic savings (the savings gap) or by a shortage of export earnings (the trade or forex gap). If the required level of investment is to be realised the external finance must be sufficient to fill the larger of the two gaps (i.e. they are not additive). It is only the larger which must be filled since the inflow can "fill two gaps at once" - foreign exchange used to buy investment goods can be supplementing both domestic savings and export earnings simultaneously.

The basis of the two gap model is thus that aid will supplement domestic savings and foreign exchange earnings. The assumption is in fact that both of these aggregates will rise by

the full value of the aid inflow. Much of the literature on the macroeconomics of aid is concerned with why this assumption may not be so.¹

Investment is equal to savings, which are (approximately) equal to domestic savings plus capital inflows. If increased capital flows displace savings, then the investment will not increase by as much as the inflow. Imports are (approximately) equal to exports plus capital inflows. If higher capital inflows displace exports then imports will not rise by as much as the rise in inflows. The first of these possibilities has been the subject of the savings debate. The second possibility is captured in the notion of aid as Dutch disease.

The argument that aid displaces savings - whose best known proponent is Keith Griffin (1970) - is based on a simple, two equation model. One equation is the accounting identity that savings equal income minus consumption. The second equation is a consumption function with aid on the right hand side. Hence an increase in aid increases consumption and therefore reduces savings. There have been criticisms of both the theoretical model and its subsequent empirical application. Of these criticisms the most damning is probably the fact that the model holds income constant in the face of the aid inflow. If aid also affects income - as we might expect - then the impact on savings becomes ambiguous.

Griffin's model is a very simple one. But, following Heller (1975), more elaborate models have been developed of aid's impact on public savings - what I have dubbed the fiscal response model. The theoretical result of this model is that aid will be used to finance lower taxes and borrowing from domestic sources, and be spread across expenditure categories. Since taxes fall but current expenditures rise by less than the value of the aid inflow, the net impact on public savings is ambiguous (and, surprisingly, not considered in many studies applying this model). However, despite the more elaborate nature of the fiscal response model, it does not overcome the basic criticism made of Griffin's two equation model - that is, it too assumes income to be unaffected by the aid inflow.

There has been a far smaller volume of work examining aid's impact on investment. A few empirical studies estimate equations for aggregate investment, with aid on the right hand side. But theoretical considerations would lead us to expect that the channels through which aid affects public and private investment are quite different, and so should be modelled and estimated separately. The fiscal response literature includes analysis of the relationship between aid and public investment, but there has been little consideration of the aid-private investment link. The country studies in Part II all try to address this issue.

Dutch disease is the adverse consequences of a boom in one part of the economy on another. Typically a commodity boom raises the relative price of non-tradables to tradables - that is an appreciation of the real exchange rate - thus undermining the competitiveness of other traded goods sectors. Aid is argued to have such effects. The shift in relative prices is the correct response to the changed circumstances: the disease comes if the changes are not readily reversible if the boom ends. So, if the availability of aid now undermines the basis for later export performance, the presence of aid can reinforce aid dependence. (Aid dependence is defined as a the situation in which a country is not on a growth trajectory which will allow it to finance investment and forex requirements - imports plus debt service - from its own resources in the foreseeable future).

Investment is approximately domestic savings plus aid, and imports approximately exports plus aid. As laid out in the accounting framework there are several other items that have to be added in for the identities to balance - such as changes in reserves, private current transfers and errors and omissions. The framework serves as a basis for identifying which components have been quantitatively important sources of investment or forex finance - hence inviting investigation of a possible relationship between aid and that variable. Most of these areas have been neglected in the macroeconomic analysis of aid. They are pursued here in the country studies in Part II.

Macroeconomic effects of aid-supported policies

The rise in structural adjustment lending since the early 1980s has two important consequences for the analysis of the macroeconomics of aid, neither of which has been acknowledged in the vast majority of the literature. First, the macroeconomic effects of aid-supported policies may be different from the effects of the aid monies. Second, support for adjustment policies has been largely associated with balance of payments support, which may have very different macroeconomic effects from conventional project aid.

Since the inception of adjustment lending in 1980 to the end of 1991 the World Bank had committed \$41 billion in adjustment loans to 75 countries (World Bank, 1992: 7-8). During the course of the 1980s other donors have also made their aid programmes conditional - most usually, that part of a donor's aid which is balance of payments support is conditional upon having an agreed Fund/Bank policy package in place. Norway, for example, is moving the majority of its balance of payments support outside of the country frame - which is planned for several years at a time - into a budget that will be allocated on an annual basis according to recipient performance.

The analysis of the effects of aid-supported policies may be broken down into two separate questions. First, has aid affected policy? Second, to the extent that conditionality has changed policy, what have been the effects of these changes? The first question may also be broken down: (i) have donors' own financing policies have been consistent with supporting adjustment?; and (ii) which policies have been affected? It is argued in Chapter 3 that both the extent to which donors have supported reform and the extent to which required reforms have been complied with must be examined on a country-by-country basis.

The major existing study on this topic - *Aid and Power* by Paul Mosley, Jane Harrigan and John Toye (Mosley *et al.*, 1991) - is somewhat equivocal on both these points. They find that governments have been half-hearted in their commitment to some reforms and that donors have implicitly condoned this slippage by not enforcing the policies on which the aid is supposedly conditional. The World Bank's findings suggest far higher degrees of compliance

(three-quarters of all measures being fully implemented and 88 per cent partially so - World Bank, 1992: 81) - though, as reported in Chapter 3, there are some weak areas, such as monetary and fiscal policy in sub-Saharan Africa. To anticipate Part II, the four countries which are the subject of this report have all been dismantling control economies at some during the last decade and, in each case, this activity has attracted large amounts of donor support which were not formerly available.

The effect of adjustment policies has been the subject of a heated debate. Rather than rushing to join this debate, Chapter 3 lays out some of the major methodological pitfalls which may be encountered in such analysis. These are: (i) distinguishing adjustment policies from adjustment *per se*; (ii) measuring adjustment policies; (iii) the use of dummy variables to model structural change; and (iv) dynamic aspects of some results.

The essence of the first two of these points is that the object of economic analysis is to compare with versus without. For example, how would investment have behaved without adjustment policies, all other things being equal? During the 1980s things affecting economies - commodity prices, world demand, interest rates and access to international credit - have not been equal: the challenge is to disentangle the effects of these changes from those of adjustment policies. The approaches adopted by many studies (such as before versus after comparisons) are not able to meet this challenge. Similarly the variables used by many studies to measure adjustment - such as an on-off dummy, a compliance indicator or the value of adjustment lending - do not capture the types of reforms being implemented. The only approach that can tackle these problems is to model the economy and perform various policy experiments corresponding to the different adjustment conditions.

To the extent that models have been used two common failings have been improper modelling of structural change and failing to allow for the dynamic effects of adjustment. These more technical issues are pursued in Chapter 3. The discussion there also notes that the models used have inadequate modelling of aid inflows, as they fail to analyse the sort of fungibility issues which have dominated the aid literature. Hence models constructed to analyse

the effects of aid-supported policies could also potentially model the effects of aid monies - and, indeed, the relationship between the two - but this potential has not been properly realised because of the weak modelling of aid inflows. For reasons discussed in the country chapters, it has not been possible to construct full-blown models for this study, but the econometric work reported there does demonstrate some of the conflicting impacts of the two channels through which aid effects macroeconomic performance.

The importance of different types of aid

Although studies speak of "aid", or even "capital inflows", these flows are not homogenous. Historically aid flows have comprised project aid, commodity aid (including food aid), programme aid (balance of payments support) and technical assistance. These are not water-tight categories as some flows can qualify under more than one heading and project aid, for example, can include components of each of the other types of aid. We should expect the macroeconomic effects of these different types of aid to differ. The literature has mostly dealt with aid as if it were project aid - and a specific form of project aid at that, that is funds for the import cost of the project's capital expenditures. These days donors are more willing to fund local and recurrent expenditures, and these different practices will have macroeconomic repercussions.

Equally important is the very substantial part of aid which is now balance of payments support in some countries: either debt relief or import support. Again, macroeconomic effects can differ. Importantly, the forex which is provided may finance intermediate or consumer goods, rather than capital imports. The rationale is to allow for the utilisation of existing capacity, rather than making new investments in the presence of under-utilised capacity. But some donors also defend importation of consumer goods using incentive goods arguments: that is, producers, particularly peasants, will have not been producing as there were no goods to buy with their income - increasing the availability of consumer goods thus provides an incentive to produce. There has also been a debate over the potential inflationary effects of counterpart funds raised from the sale of forex or aid-financed commodities. Most donors no longer require incremental expenditure of these funds, so there will not be an inflationary impact. As an

example of the general point being made here, fiscal response studies assume aid should increase investment and government expenditure, whereas the majority of import support is intended to do neither of those things.

There has been little work on import support to date (exceptions are mentioned in Chapters 4 and 9). There are more substantial literatures concerning food aid and, recently, technical assistance. The main worry over food aid are disincentive effects it may provide to domestic agricultural production. Less explored are the distortions created by technical assistance on the domestic market for skilled labour. The important point to note here is that all these debates have repercussions for analysis of aid's macroeconomic effects - but that these repercussions have not been appreciated in most of the literature. One reason for this oversight is the difficulty in obtaining data giving breakdown of aid into these functional categories. Nonetheless, the studies in this volume do try to allow for differences caused by the changing composition of aid over time.

Note of Chapter 1

1. The other substantial part of the literature is that in which growth is regressed on aid. Lengthy critiques of this approach have been made (Riddell, 1987; White, 1992 and White and Luttik, 1994) which are not repeated here.

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CHAPTER 2

THE MACROECONOMICS OF AID: A LITERATURE REVIEW

2.1 Introduction

What does existing work tell us about aid's macroeconomic impact? I have argued elsewhere (1992a and 1992b) that much of it tells us very little. The arguments of those papers are not repeated in full here. Rather Part 2.2 presents an accounting framework, which is a useful basis for identifying the macroeconomic effects which aid may or may not have. The framework is used for a discussion of key theoretical debates and results from existing studies are discussed in Part 2.3. The main points are summarised in Part 2.4

2.2 An accounting framework and theoretical debates

The national accounting identity:

$$\text{Savings gap} = \text{Current account} = \text{Capital account} \quad (2.1)$$

is a useful starting point for the discussion of aid's impact on macroeconomic aggregates. The gap between gross national savings and investment (the savings gap) must be financed by the net inflow of foreign savings (the capital account), and the value of this inflow must equal the current account deficit (the trade gap). These identities must hold at all times. As described below, aid will appear in either the current or capital account. The question is: how are the identities preserved when one of the balances is disturbed by an increase in aid? (Or, to use the terminology adopted below, how does the economy accommodate the aid inflow)? As we shall see, the aid may be accommodated either by increases in imports and investment or - if there is fungibility - through changes in other elements in the identities.

Fungibility

Aid has traditionally been primarily intended to increase investment and imports, and that is the purpose it is assumed to have in much of the literature on the macroeconomics of aid - to the extent that these aggregates do not increase by the value of the aid inflow then the aid is said to be fungible. It is useful to distinguish two kinds of fungibility: aggregate fungibility and categorical fungibility. Suppose that funds (A) are intended to be used to finance goods or activity X. Aggregate fungibility occurs if the increase in expenditure on X is less than the value of the funds (that is, $dX/dA < 1$). Suppose X may be sub-divided into items X_1, X_2, \dots, X_n and that the funds are intended to be used for item X_1 . If expenditure on the other categories of item X (X_2, \dots, X_n) rises in response to the increased availability of funds ($dX_j/dA \neq 0$ for any $j \neq 1$) there is categorical fungibility.

This distinction may appear unnecessary, as whether a case is described as aggregate or categorical fungibility rests on the perhaps arbitrary designation of expenditure items as X or non-X goods. In practice, the distinction proves easy to apply. Consider the case of import support aid given to finance importation of intermediate goods. If the aid reduces exports through Dutch disease effects or displaces foreign borrowing imports rise by less than the value of the aid inflow: there is aggregate fungibility. But if imports of consumer goods increase as a result of the aid then there is categorical fungibility. Of course, both may types of fungibility may occur at once. The distinction is also useful in the discussion of aid's impact on fiscal policy. Aggregate fungibility exists if taxes or government borrowing fall when aid increases. There is categorical fungibility if non-developmental expenditures (such as military expenditure) rise with higher aid.

The capital and current accounts

The capital and current accounts from equation (2.1) may be written in more detail as:

$$X + OT + PCT + OFP - M - DS = - (LTL^c + OKI + dR + EO) \quad (2.2)$$

where X is exports of goods and non-factor services, OT official transfers (that is, grant aid), PCT private current transfers, DS debt service (amortization plus interest payments), OFP other net factor payments from abroad, M imports of goods and non-factor services, LTL^c gross inflows of concessional long-term capital (non-grant aid), OKI other capital inflows, dR the change in reserves and EO errors and omissions.¹ (A positive dR is a reduction in reserves, that is an "inflow" of capital to the capital account).

Aid is either a grant - that is an official transfer (OT) - on current account or a concessional long term inflow (LTL^c) on the capital account,² that is:

$$AID = OT + LTL^c \quad (2.3)$$

Combining equations (2.2) and (2.3) gives:

$$M = AID + PCT - DS + OFP + X + OKI + dR + EO \quad (2.4)$$

As already mentioned: this identity must hold. Therefore an increase in aid must be accompanied by changes in one or more of the other variables in the identity. The orthodox view - made explicit in the two gap model - is that aid leads to a one for one increase in imports: thus the identity contained in equation (2.4) is preserved since the first term on both the left and right hand side of the equation increase by the same amount.

But, as is clear from the identity, the aid inflow may also be accommodated by any of: reduced receipts of private transfers or factor income, a lower gross net capital inflow (either flight of domestic capital or the crowding out of private inflows - a change in either OKI or EO), higher debt service payments, reserve accumulation or reduced exports. It is the last of these - the idea that aid may cause an appreciation of the real exchange rate (aid as Dutch

disease) and so discourage exports which has excited the most attention. Some aid - debt relief - is indeed intended to increase debt service: the macroeconomics of such aid are discussed separately in Chapter 4.

Aid and exports

The two gap model was criticized from a traditional trade theory perspective by Joshi (1970) and Findlay (1973: Chapter 10) who both questioned the excessive structuralism of the model which excluded any price effects. An aid inflow in the alternative model presented by Findlay would improve the terms of trade of the recipient - that is reduce its competitiveness so that imports rise by less than the value of the aid (White, 1992a: 211-212). The result that aid reduces the competitiveness of the recipient follows from a wide range of open economy macroeconomic models (see Dornbusch, 1980: Chapter 6; and White, 1990) and analyses of the real exchange rate (Edwards, 1988 and 1989) and has led to a literature on "aid as Dutch disease".

The Dutch disease operates through the spending effect. Aid-financed activity results in increased demand, some of which will fall upon non-tradables. The price of the non-tradable goods and services will therefore rise relative to that of tradables, whose price is assumed to be given (the small country assumption): that is, there is an appreciation of the real exchange rate. (If there is a floating exchange rate regime the real appreciation may also operate through the nominal rate). The appreciation is the correction economic response to the increased availability of consumer goods. The disease in Dutch disease comes if changes in structure the appreciation brings about are not readily reversible of the commodity boom or aid inflow comes to an end.

The basic mechanism, outlined in the previous paragraph, is simple. The analysis of actual cases is more complex on account of the different channels through which aid reaches the economy. For example, Younger's (1992) analysis of the aid boom in Ghana suggests that the aid crowded out private investment because of the government's tight monetary policy to counteract the aid-financed increase in demand as part of an attempt to maintain the real exchange rate.

More complex stories also emerge from consideration of changes in the composition of expenditures - especially investment - resulting from Dutch disease effects, an analysis that has been taken furthest in the work of David Bevan, Paul Collier and Jan Willem Gunning (for example, Bevan *et al.*, 1990) and their analysis of construction booms. As indicated above, a windfall gain (including an aid boom) results in increased demand for non-tradables - non-tradable capital goods are identified as "construction" so that the analysis of the impact of aid on investment becomes a theory of construction booms.

Aid and other inflows

The recipient may substitute away from non-concessional sources of finance if aid funds are available, hence the increment in forex availability (and therefore imports) is less than the value of the increase in aid. One critic of aid, Peter Bauer, has argued that this saving of debt service charges is the only benefit of aid to the recipient (1976: 106-110). On the other hand - aid may "crowd in" other inflows if they support a reform process which improves the country's credit-worthiness. The notion that adjustment lending would act as a catalyst for other inflows was common in the early 1980s. The most recent World Bank report on adjustment lending restates the view, but with a recognition that there will be lags:

Reforms increase the ability of a country to use foreign savings productively. Eventually, good performance is recognized by international capital markets and bilateral lenders, but a long time may elapse between execution of reforms and this recognition, leaving a balance of payments gap that needs to be filled for growth to occur.

(World Bank, 1992: 9)

If such crowding in occurs then, in the reduced form equation, the initial aid may support increases in imports over and above the value of the aid itself.

It is important to underline the limitations of the accounting framework. Identities are not behavioral relationships. It may be observed that imports rise by less than the increase in aid because the purchasing power of exports has fallen. There may be a relationship here - the aid inflow causing a real exchange rate appreciation that crowds out exports. But there may not

- perhaps the fall in purchasing power is solely the result of adverse movements in the external terms of trade. Nevertheless, the accounting framework is useful both theoretically and empirically. Theoretically the framework allows the identification of the kind of effects that may undermine aid's impact on imports and investment. Empirically, it points to questions as to aid's effect in a particular economy. But the framework can only be the starting point for an investigation of behavioral relationships.

Internal and external balance

Now consider how the internal (investment-savings) balance accommodates an aid inflow. The identities can be rearranged to obtain the following expression:⁴

$$I = AID + GDS + PCT + OFP + OKI + dR + EO - DS \quad (2.5)$$

where I is investment and GDS gross domestic savings.

Similar to the discussion of equation (2.4), an increase in aid may be accommodated through a rise in investment - but it is also possible that other aggregates in the identity may adjust. Five of these possible adjustments - reserve accumulation, capital flight/crowding out of international capital, increased debt service, and reduced private transfers or factor payments - are the same as those which may accommodate aid in the external account identity. Hence, the use of aid to, for example, accumulate reserves, simultaneously undermines aid's contribution to both imports and investment. On the other hand, if aid's impact on investment is offset by displacement of domestic savings then whether or not the contribution to increased forex is offset by a decline in exports (the only remaining channel) is a separate matter (i.e. one need not imply the other).

The possibility that aid may displace savings - the savings debate - has generated a substantial literature, of which reviews are available (e.g. Riddell, 1987; and White, 1992a). Griffin (1971) stated the argument that aid displaces savings as follows:

$$C = \alpha + \beta (GDP + AID) \quad (2.6)$$

where C is consumption. Since domestic savings are given by:

$$GDS = GDP - C \quad (2.7)$$

it follows that:

$$GDS = -\alpha + (1 - \beta)GDP - \beta AID \quad (2.8)$$

demonstrating the negative relationship between aid and savings.

The accounting framework presented here allows us to be clear about Colman and Nixon's claim that Griffin's argument that aid displaces savings "contains a basic algebraic flaw" (1978: 115) since, they argue, aid should also be added to the savings identity (so that $S = Y + AID - C$). This argument is not correct. Equation (2.6) is a behavioral function - maybe aid should be included and maybe not, the issue is ultimately an empirical matter. But equation (2.7) is an identity and cannot be messed about. Equation (2.7) is a correct definition of gross domestic savings. If savings were instead to be gross national savings then grant aid should be included but aid loans not (though Griffin states that the "S" in his analysis is domestic savings).

By definition:

$$GNS = GDS + NFP + NTR \quad (2.9)$$

where GNS and GDS are gross national and domestic savings respectively. Equation (2.6) is re-written as:

$$C = \alpha + \beta (GDP + AID + NFP) \quad (2.10)$$

Hence:

$$\begin{aligned}
 GDS &= -\alpha + (1-\beta)GDP - \beta(AID + NFP) \\
 GNS &= -\alpha + (1-\beta)(GDP - NFP + OT) - \beta LTL^c
 \end{aligned}
 \tag{2.11}$$

Thus if are concerned to analyze national rather than domestic savings then Colman and Nixon are correct that aid on current account appears not to have a negative relationship with savings - but that on capital account still does. Moreover, as stated above, the concern is really with domestic savings anyhow, in which case Griffin's argument appears to be correct.

However, there have been many other arguments raised against Griffin - most notably in the collection of comments published in the *Oxford Bulletin* and *Economic Development and Cultural Change* following publication of his original papers. We shall return to some of these criticisms below, but here concentrate, instead, on the link between aid and investment. In examining this link it is important to distinguish between public and private investment, since the determinants of these components of aggregate investment are quite different.

Aid, fiscal response and public investment

In the two gap model, aggregate investment may be constrained by the shortage of aggregate savings. The three gap model (e.g. Bacha, 1990; and the models in Taylor, 1993) retains this overall savings gap but adds also a third gap - the fiscal gap (i.e. $S_p - I_p = T - G$). The fiscal gap may be tighter than the aggregate savings gap if the government imposes on itself a PSBR limit. The PSBR limit will constrain the level of I_g ; a crowding in/out element is included in the private investment function, so that I_g determines I_p and, hence, aggregate investment. This level of aggregate investment may well be less than the level allowed by the total level of domestic savings.⁵ A three gap model is presented in Chapter 4.

In three gap models, government investment is assumed to be determined by, *inter alia*, capital or aid inflows - with a coefficient determined by empirical estimation. In the fiscal response literature this *ad hoc* approach is replaced by a utility-maximising framework in which the recipient government's response to the aid inflow assuming the government to maximise a

loss function subject to the budget constraint. The policy variables in the argument of the loss function are government investment, developmental and non-developmental current expenditure, taxes and domestic borrowing. The theoretical result from the model is that each of these variables will change to accommodate the aid inflow.

The focus of the fiscal response literature is on the issue of aggregate fungibility (although some attention is paid to categorical fungibility through the disaggregation of recurrent government expenditure). A third area of research has analysed the categorical fungibility of government expenditures in more detail. The basic model is that applied by Pack and Pack (1990) to Indonesia, which has been applied also to Kenya (Ekman and Metell, 1993), India (Gupta, 1993b) and Dominican Republic (Pack and Pack, 1993). These studies regress sectoral expenditure (agriculture, industry, social sectors etc.) on project aid designated for that sector, other project aid, GDP and time. There is categorical fungibility either if the response of spending in a particular sector is (significantly) less than one⁶ or if the coefficient on the "other sector" variable is significantly positive.

Aid and private investment

Less attention has been paid to the aid-private investment relationship. Some aid is made available for lines of credit to be on-lent to the private sector and some donors, notably USAID, are keen to ensure projects assist private entrepreneurs. The increasing importance of import support is an important channel through which aid can stimulate the private sector. *Nonetheless*, general it remains true that much aid - certainly project aid - goes through and is for the public sector. Thus a main link between aid and private investment will be from the fiscal response to aid, and how these fiscal variables affect private investment.

Aid will increase private investment if there are crowding in effects from public investment, such as through the provision of infrastructure. Aid-financed public investment may be more likely to have crowding in effects than that financed from domestic resources since the financial crowding out effects may not be present when aid funds are used to finance investment. If the increase in government expenditure does not fully match the aid inflow to government

resources then there will be a reduction in the PSBR, reducing the need for deficit financing (White and McGillivray, 1992). Conversely, if donors require a government contribution to project finance then aid inflows can increase the need for deficit finance with inflationary consequences (Doriye and Wuyts, 1992). As well as a possible credit squeeze, inflation itself may also discourage private investment.

Empirical analysis of the determinants of private investment in developing countries (e.g. Greene and Villanueva, 1991) have found the accelerator mechanism to be important - that is the level of investment is positively related to the rate of growth of output. Aid-induced growth may therefore initiate a "virtuous circle" of higher growth and private investment.

Aid, income and output

The ultimate objective of aid is to raise the welfare of the recipient population. In studies of aid impact the growth of income has been taken as the proxy for national welfare. Regressions of growth on aid have many flaws (see White (1992a) for a discussion of these flaws and Levine and Renelt (1992) for an examination of the unrobustness of most growth regressions). It is far better to model aid's impact on variables such as imports and investment, increases in which are assumed to result in higher growth.

However, the economic models used in the aid literature have been quite simplistic. The empirical literature has mostly consisted of single equation models. Exclusion of possible simultaneous relationships casts a serious doubt over much of the literature's findings. Griffin's model of aid and savings (equations 2.6 and 2.7) is a two equation model with two endogenous variables - consumption and savings. Griffin assumes income to be exogenous, that is fixed in the face of an aid inflow, ignoring the possibility of production or consumption multiplier effects on income in the current period. With income feedback effects, aid can lead to higher consumption without any reduction in savings - indeed both consumption and savings may increase. White (1993) shows that the theoretical result from the fiscal response model that aid displaces taxes is a partial one which may be reversed if aid increases income and so taxes.

However, the analysis in White (1993) is misformulated, since the national accounting identity used is that for a closed economy:

$$Y = C + I \quad (2.12)$$

But an aid-receiving economy cannot be closed! The identity should instead be:

$$Y = C + I + X - M \quad (2.13)$$

Since $M = X + A$, equation (2.13) may be rewritten as:

$$Y = C + I - A \quad (2.14)$$

suggesting that aid has a depressing effect on domestic demand. This argument that aid displaces demand for domestic output has recently been stated at the macroeconomic level by Bhaduri *et al.* (1993) and Bhaduri and Skarstein (1993).

But to argue that aid displaces domestic demand assumes that consumption and investment are unchanged in the face of the aid inflow - which is not so. At the simplest, the sum of consumption and investment rise by exactly the amount of the aid inflow. The aid fully finances these increases and there is no net impact on expenditure on domestic output. But the story may be more complicated. Let us suppose Griffin's consumption function and an aid-driven investment function:⁷

$$C = \beta_0 + \beta_1(Y + A) \quad (2.15)$$

$$I = \gamma_0 + \gamma_1 A \quad (2.16)$$

From equations (2.14), (2.15) and (2.16) it follows that:

$$\frac{dY}{dA} = \frac{\beta_1 + \gamma_1 - 1}{1 - \beta_1} \quad (2.17)$$

showing that the overall impact of aid on aggregate demand is positive, provided that $\beta_1 + \gamma_1 > 1$ - that is, the impact effect of an aid inflow on absorption is greater than one.

The impact on savings is given by:

$$\frac{dS}{dA} = \gamma_1 - 1 \quad (2.18)$$

That is, savings fall if the increase in investment is less than the value of the aid inflow. This result is the same as Griffin's; but the difference here is that it is possible that $\gamma_1 > 1$, so that savings will rise. If the aid goes to increase government investment and there is crowding in then it is not unlikely that the condition given in equation (2.18) will be satisfied.

For aid to reduce income through demand displacement two conditions must be satisfied: (i) the economy must be demand constrained, rather than supply constrained; and (ii) aid's impact on absorption must be less than the aid inflow. The latter condition is most likely to be satisfied by balance of payments support. Project aid and technical assistance are, fungibility apart, linked to equivalent expenditures in the recipient economy. In the case of import support the importer receiving the goods has to pay the government countervalue for the foreign exchange used - the import support is aid to the government but not the importer. As discussed in Chapter 4, the government is not expected to spend these counterpart funds in a great number of cases (but to use them to reduce the need for deficit finance) - so there is no direct increase in expenditure corresponding to the aid funds (but there may be indirect effects if reduced deficit finance crowds in private investment or increased import availability complements increases in expenditure on domestic output). Similarly, donor contributions to a recipient's debt service obligations are not intended to allow the recipient to indulge in expenditures it would not have undertaken in the absence of the debt relief - though such aid can be highly fungible.

For an increase in demand to lead to higher output and income then the economy must be demand constrained. If, instead, the supply constraint is binding then this higher demand will be converted into inflation (equivalent to the spending effect in models of aid as Dutch disease). Of course, if on the other hand, the aid depresses demand for domestic output it has a deflationary price effect. In practice, we might usually expect a combination of higher output and inflation.

It is also possible that the aid has production multiplier effects - through increasing the efficiency of production or providing intermediate goods to enable the utilization of idle capacity. If aid does stimulate supply in this way the effect of the aid may be deflationary. Roemer (1989) incorporated such a possibility into his model of the macroeconomic impact of counterpart funds. But little empirical or detailed theoretical work exists analyzing the differential impact of aid depending on the type of aid and the nature of the binding supply-demand constraints. In Chapter 4, the macroeconomic effects of different types of aid are discussed in more detail and a formal model of these effects presented. But in Part 2.3 of this chapter we consider existing empirical work, which has for the most part been restricted to single equation analysis of specific relationships identified in the aid debate.

Aid dependence

The concept of aid dependence has long been evoked by critics of aid, who imply that aid allows foreign interference in domestic political and social development. Such a concern, which may not be unfounded, is not pursued here. Instead aid dependence is defined with reference to the two gap model (see Mutasa and White (1993) for a fuller exposition).

Chenery and Strout's (1966) approach was to set a growth target and hence, given the model parameters, determine the savings and trade gaps. The amount of aid required is that to fill the larger of the two gaps. If either gap is positive then aid is required to attain the target growth rate. Most important is if the gaps are closing or widening. If they are not then, in the absence of further structural change, the country will need to receive aid indefinitely to maintain growth. It is this situation - when the gaps are not closing - that we define as one of aid

dependence: the country will always need aid. A related topic of interest is the extent to which aid is helping remove (or reinforce) this position.

This definition of aid dependence differs from that implicit in much of the original two gap literature, where the term was used to describe a situation in which aid was needed to attain the target growth rate. The definition is also different from that which is often used more loosely of cases in which aid pays for a large part of the external current account or government deficit. In fact, the accounting identities show this latter use of the concept of aid dependence to be nonsensical. Once it is accepted that the aid flows are exogenous, then it is clear that a given aid inflow must result in an equivalent worsening of the external current account and government account. If a country is receiving substantial aid, it makes little sense to look at the external current account (excluding official transfers) or fiscal deficit (excluding grants) and say that the aid is needed to fill these gaps, as the gaps would not exist in the absence of the aid. Only if it can be shown that the same levels of exports, imports and government revenues and expenditures would prevail in the absence of the aid (i.e. the deficits are structural) can this latter interpretation be given. But the idea that all these aggregates should be unaffected by the aid inflow runs counter to the whole analysis of aid's macroeconomic impact.

2.3 Empirical analysis of aid's macroeconomic impact

Much of the aid literature has been empirical rather than theoretical in nature - and the empirical work is most strongly concentrated in the aid-savings and aid-growth debates. Before moving to these areas, the more limited empirical evidence of aid and external account variables is first presented.

Aid, imports and fungibility

Despite the fact that aid is intended to increase imports, then there has been surprisingly little empirical analysis of this issue. Some models, such as those used to analyse aid's impact at the global level assume, as did the two gap model, that aid is fully used to finance higher imports - a result confirmed by the cross-country study of Massell *et al.* (1972). However, Chenery and Syrquin (1975) report a coefficient on aid for imports of only 0.43. Moran (1989)

provides a more rigorous analysis of the topic, but reports his results as elasticities, so without the data it is not possible to know if the marginal increment is significantly less than unity, which is the hypothesis in which we are interested.

Work undertaken within the World Bank (Demery *et al.*, 1993) for the SPA has analyzed how much higher import volume in SPA countries in the pre and post adjustment periods is because of higher aid inflow and how much because of improved export performance (and therefore the result of policy reforms). The paper states that 58 per cent of the increase in import volumes is from improved export performance and the remaining 42 per cent from the aid inflows (and in the best performers improved exports accounts for the whole of the increase, as the higher aid they have received is just sufficient to meet the debt burden).

Faini *et al.* (1991) analyzed whether adjustment funds had acted as a catalyst for other inflows (and so may result in a more than one-to-one increase in imports), and found that they had not; Mosley *et al.* (1991) find the same result. The one area that has received rather more attention has been the recent concern that aid may cause Dutch disease.

Aid and the real exchange rate

Econometric analysis of aid's impact on the real exchange rate has been reported by van Wijnbergen (1985) and White and Wignaraja (1992). Younger (1992) discusses the pressure for an appreciating real rate in the case of Ghana and Nabi and Hamid (1990) make the same point with regard to Pakistan in the 1960s, but both without a formal test.

Van Wijnbergen regressed the real exchange rate on current and lagged aid, GDP, a proxy for technological progress, the terms of trade and non-concessional borrowing for six African countries: a significant negative relationship is found in four cases. Aside from some econometric problems (see White, 1992b: 219), van Wijnbergen's specification leaves out important short-run determinants of the real exchange rate, notably the nominal rate, but also a measure of the government's fiscal and monetary policy stance.

The model of White and Wignaraja is based on that of Edwards (1989) which combines long-run (fundamental) and short-run determinants. The Sri Lankan case is one of substantial aid inflows since liberalization in 1977 and little movement in the real exchange rate, despite continued nominal devaluation. That is, there has been an increasing wedge between the nominal and real rates. The aid inflows are shown to have had an important contributory role. Lal (1985) reached the same conclusion by a rather different route.

The behaviour of the real exchange rate in the presence of substantial aid inflows has also been examined in the context of a CGE in two studies, which also permit the tracing through of the price effects on exports. The model of Collier and Gunning (1992) analyses two alternative means of maintaining a liberalization - devaluation or aid inflows - in African economies. They find that aid inflows do indeed have a price response that draws labour and capital into the production of non-tradables, so that the export supply response is weakened - exports expand by only 9% two years after the reform in the case of an aid-financed liberalization, compared to 12% if there is devaluation.

Weisman's (1990) CGE of Papua New Guinea shows aid to have spending effects through increases in government expenditure which result in a real exchange rate appreciation and move of resources into the production of non tradables.

Aid and aggregate savings

Griffin supported his argument that aid displaces savings with a simple regression of aid on savings. Table 2.1 shows Griffin's results and those of subsequent studies, which have also mostly found a significant negative relationship.

But such an approach suffers from serious misspecification bias (even in the context of Griffin's own model - see White, 1992b). Subsequent work (e.g. Morriset, 1989) has used more sophisticated specifications, but single equation estimation cannot clearly identify the different channels through which aid affects savings. Yet few studies have adopted a simultaneous approach.

**Table 2.1 Results of selected studies of
aid, savings and investment**

Study	Data	Coefficient
<i>Savings</i>		
Griffin (1970)	Cross-section: 32 LDCs	-0.73 (6.64)
	Time series: Colombia	-0.84 (2.90)
Weisskopf (1972)	Pooled: 44 LDCs, 1950s and early 1960s	-0.23 (5.30)
Gupta and Islam (1983)	Cross-section: 52 LDCs	-0.47 (n.a.)
Morisset (1989)	Time series: Argentina	-0.98 (0.91)
<i>Investment</i>		
Levy (1988)	Aggregate cross-section for sub-Saharan Africa	1.08 (4.40)
Bhalla (1990)	Time series: Sri Lanka	0.94*
White (1992c)	Time series: Sri Lanka	
	Public investment	0.32*

Notes: *elasticities. Coefficient from White (1992c) is that from the levels regression for an error correction model, i.e. it is the long-run relationship. Figures in parentheses are absolute t-statistics.

Sources: as shown in table.

Snyder (1990) argues, correctly, that single equation estimation is biased and sets out a simple two equation simultaneous model - which he then estimates by OLS! Simultaneous estimation techniques cannot, anyhow, be applied to his model as it is underidentified. Levy (1984) estimates a model for Egypt in which aid can increase investment and so, through a production function, output, thus leading back to higher income. Despite this feedback effect his empirical estimates suggest that displacement effects of aid inflows on public savings dominate. However, he does not look at the dynamic aspects of his model - that is the possibility that future savings may be higher despite current displacement.

Analysis of theories of consumption (the converse of savings) are, of course, rooted in more complex formulations than the simple savings function used by Levy (and others). Gupta and Islam (1983) estimate a simultaneous model of savings and growth which contains a number of demographic relationships - but the model is void of economic analysis.

The aid-savings relationship is a debate very much in need of some attention to quality, rather than quantity, of analysis. One direction for such attention is to analyze the relationship at the more disaggregate level of public versus private savings - the fiscal response literature considers the former of these. There is practically no literature at all analyzing the response of private savings to aid inflows: Levy (1984) is the only case of which I am aware. Before moving onto the fiscal response literature a short discussion of empirical analysis of the aid-investment link is in order.

Aid and investment

The comments of the preceding paragraph apply equally to the aid-investment literature. There has been far less analysis of this areas that of aid and savings - the results from some studies are shown in Table 2.1. In Part 2.2 a number of channels for aid's impact on public and private investment were identified - but these mechanisms have not been empirically explored. Indeed, the aid-private investment link has been empirically analyzed in only two case - White's (1992c) simultaneous equation model for Sri Lanka and a cross-country simple regression by

Mosley (1987). Both of these studies find a positive relationship between aid and private investment.

Levy (1987 and 1988) reports regressions of investment on aid. The coefficients from these regressions are always significantly positive and usually close to unity. But the shortcoming of single equation estimation of such relationships need be borne in mind. Bhalla (1990) estimates a simultaneous investment-growth model for Sri Lanka, finding the elasticity of investment with respect to aid to be 0.94%. This finding suggests a more than one-for-one increment since aid only finances one third to one half of investment in Sri Lanka.

Empirical estimation of the fiscal response model

Table 2.2 reports the results of selected fiscal response studies. These show that aid does appear to have a positive impact on government investment - in some cases equal to, or greater than, unity. But Heller found that aid also displaced taxes and borrowing.

However, these results are flawed by both the theoretical shortcomings of the model and problems in its empirical estimation (White, 1994). The fiscal response model implicitly contains feedback from the target equations used in the model. But all applications, except that of Forster (1993), ignore this effect. Forster's estimation of the model for Papua New Guinea and found that, as expected, feedback from the targets reinforces the impact of aid on investment and reduce to the extent to which the increase in funds is offset by falls in borrowing and taxation.

The results are also partial ones as they ignore potential feedback from changes in economic variables in response to the aid inflow. In fact, the way in which the results are presented makes them more partial still, since, authors such as Gang and Khan (1991) do not report the total impact of aid on the categories of fiscal activity put only the coefficients from structural equations. White (1994) shows that, contrary to Gang and Khan's claim that aid in India is all used in government investment, the reduced form shows aid to have no impact on investment at all.⁸

Table 2.2 The impact of aid on government investment from selected studies

		Loans	Grants	Bilateral	Multilateral
Heller (1975)	Full sample, official flows	0.53	0.64	-	-
	Full sample, total flows	0.76	0.33	-	-
	Anglophone, official flows	0.41	0.09	-	-
	Anglophone, total flows	0.63	0.31	0.34	0.32
Gang and Khan (1991)	India, 1961-84	1.03	1.79	1.55	0.63
		(0.41)	(0.52)	(0.19)	(0.25)
McGillivray and Papadopoulos (1991)	Greece, 1962-80	0.62	3.64	-	-
		(0.44)	(0.74)		

Note: Heller's full sample comprised eleven African countries, for various years over the period 1960-70
 - denotes calculated in study
 figures in parentheses are standard errors

The various shortcomings in the fiscal response model and the methodologies applied to its estimation clearly indicate the existing results cannot be meaningfully interpreted. We would argue, moreover, that the problems in the model are too great to be resolved. An alternative approach, which has been adopted to examine the sectoral impact of aid, appears to be the more promising channel.

Categorical fungibility of aid to specific sectors

Pack and Pack (1990) regress sectoral government expenditure (D_i) on GDP, project aid designated to that sector (A_i), project aid to other sectors and time for five sectors (the total included in these five sectors omit expenditures on a few items).⁹ Logs are used so that the coefficients are elasticities. It is not clear why logs are used, since we are interested in the marginal increment in expenditure with respect to aid. If D_i is inclusive of aid, as it is for Pack and Pack, then the hypothesis of interest is whether the coefficient on A_i is one or more; if the expenditure is exclusive of aid, as for the similar study of Kenya by Ekman and Metell (1993), then there is fungibility if the coefficient is significantly less than zero. Regressions are also estimated for recurrent (non-developmental) expenditures and revenue. System estimation (Seemingly Unrelated Regressions, SUR) is used to allow for the cross equation error correlation implied by the relation of the dependent variables through the budget constraint.

The coefficient estimates are then used to simulate the effects of a one rupiah increase in aid per capita, which is spread over the sectors in proportion to their average share in project aid during the period of the study. The results of this analysis are shown in the top part of Table 2.3(a). The first column shows the increase in aid in each sector. The second shows the increase in expenditure (inclusive of aid-financed expenditure) attributable to sector aid, the third column reports increases in sectoral aid attributable to aid targeted at other sectors and the fourth column the total change in expenditure. Thus values in the second column significantly different from the value in the first column, or values in third column significantly greater than zero, are both indicative of the presence of fungibility.¹⁰ Pack and Pack (incorrectly) state that there is evidence of fungibility of the figure in column 4 is approximately that same as that in column 1.

Table 2.3(a) Categorical fungibility in Indonesia

	Change in aid	Coefficient on		Total
		Sector aid	Other aid	
	(1)	(2)	(3)	(4) = (2)+(3)
Agriculture	0.10	0.09	0.05	0.13
Industry	0.46	0.37	0.08	0.44
Transport and tourism	0.21	0.18	0.02	0.20
Social sectors	0.10	0.07	0.12	0.19
Other	0.14	0.18	0.27	0.45
Current expenditure	0.00	n.a.	n.a.	0.17
Total	1.00	0.88	0.53	1.58
Revenue	0.00			0.29

Source: Pack and Pack (1990)

Table 23(b) Categorical fungibility in Kenya

	Change in aid	Coefficient on	
		Sector aid	Other aid
	(1)	(2)	(3)
Agriculture	0.18	0.11	-0.10
Industry	0.33	0.05	0.18
Public works	0.15	0.07	0.09
Social sectors	0.22	-0.02	0.01
Other	0.11	0.00	-0.00
Current expenditure	0.00	n.a.	n.a.
Total	1.00	0.22	-0.18
Revenue	0.00		

Source: Ekman and Metell (1993)

Note: may not sum due to rounding.

/ctd.

Table 2.3(c) Categorical fungibility in India

	Change in aid (1)	Coefficient on	
		Sector aid (2)	Other aid (3)
Agriculture	0.17	0.07	0.10
Food subsidies	0.01	-0.00	0.07
Industry	0.32	-0.07	0.02
Energy	0.30	0.13	0.04
Transport and communications	0.10	0.01	0.06
Other	0.10	0.09	0.35
Total	1.00	0.36	0.64
Defence			
Other non-developmental			
Government revenue			
High powered money			
Borrowing			

Source: Gupta (1993b).

The table also shows the results for Kenya obtained by Ekman and Metell (1993) (see Table 2.3(b)). Since they use an expenditure series which is exclusive of aid fungibility is present if the coefficient in the second column is significantly less than zero and that in the third, as above, significantly greater than zero.

The figures for Indonesia show an expenditure increase of 1.58 rupiah for a one rupiah increase in aid. Half of this increase (0.29 rupiahs) is financed by an increase in revenue. The finding that aid increase revenue collection is in contrast to the consensus in the fiscal response literature that taxes fall as aid rises. Pack and Pack suggest that the need to increase revenue collection comes from the local cost financing contribution of government.

The remaining 0.29 rupiah is supposed to come from falls in expenditure in the excluded sector. The method of excluding a sector means that, through an identity, expenditure in this sector is assumed to adjust to the required level. This assumption is in effect a cross-equation restriction in the model - a restriction whose validity may be roughly checked by plotting the fitted versus actual values - but which is left implicit by Pack and Pack's methodology. A better approach would be to incorporate the restriction into the model and estimate by three stage least squares.¹¹

In the case of Ekman and Metell's study the expenditure increase is marginally (but probably insignificantly) less than one - so that they conclude that aid causes a slight reduction in non-aid financed expenditure. In fact, we cannot be sure about this statement. If the budget constraint they give is correct then expenditure in the excluded sectors must fall in the face of the aid inflow, since the increase in expenditure in other sectors plus the fall in revenues is slightly greater than one. But the budget constraint is written excluding borrowing (printing money) - Pack and Pack state that in Indonesia budgets have been balanced, but the topic is not mentioned in the Kenyan study.¹² The observed decrease may be accommodated by a fall in borrowing - but borrowing also may have risen to allow a further rise in expenditure in the excluded sectors: we simply cannot say. But we can say that inappropriate imposition of a

balanced budget constraint assumes that aid has no effect on public savings, when this effect is one of the key issues under examination.

Gupta's (1993b) study of India both includes the full budget constraint (although the treatment of non-project aid is unclear) and does not exclude any sectors. In his model, however, borrowing is determined as a residual, so that same comments as before apply. The results show an increase in development expenditure which is almost identical with the aid flow, but also an increase in non-developmental expenditures, almost entirely financed by increased borrowing. These results are difficult to understand: we find neither fungibility between developmental and non-developmental expenditures, nor that aid crowds in government developmental expenditures. Why should the government borrowing to finance defence be considered a response to the aid inflow when the aid cannot in any sense be being said to be being used for the defence expenditures?

The approach described here is only a partial one for reasons already discussed. The expenditure equations include GDP as a regressor, hence holding income constant rather than allowing for multiplier effects. To the extent that aid does increase GDP the full effect of aid on expenditure is being under-stated. To capture the full effect of the aid inflow requires estimation of an economy-wide model.

So far we have discussed the results of these studies as regard to aggregate fungibility. Analysis of the sectoral effects shows that sectoral expenditure increases by nearly or more than the value of aid allocated to that sector in all but one case (industry in Kenya). However, only in one case ("other aid" for Indonesia) is the increase attributable to sector-specific aid as large as the increase targeted at that sector. In the other cases the remainder (which is as often as not the larger part) comes from other aid. These results are evidence of categorical fungibility. First, because sector aid is apparently not fully used in that sector and, second, because other aid increases sectoral expenditure. But some of the increase must, at least in the Indonesian case, come from higher revenue. It is curious that a revenue term is not included in the

expenditure regressions. Use of the full simultaneous model, incorporating the budget constraint, as suggested above, would take care of this problem.

Simultaneous equation models

There are a few multi equation models of aid impact which may be mentioned (in addition to the two CGE models mentioned above in the discussion of aid and exports). Hill (1988) presents a twenty-two equation output-driven model of Bangladesh, which disaggregates the government and agricultural sectors: a halving of aid flows is shown to lead to a drop in GDP of between 5.9 and 11.8 per cent. White's (1992c) eleven equation model of Sri Lanka focuses on investment, but is set in the context of a demand-determined macroeconomic model. A reduction in aid is shown to reduce both public and private investment and lead to a fall in GDP of about twice the value of the aid reduction. Radelet (1993) presents a CGE - the results from which are discussed in Chapter 3 - to analyse if Gambia's economic growth comes from rain, aid or policy reform. Ahluwalia's (1979) model of India allows for the incorporation of possible disincentive effects from aid. These models provide a useful basis for further work.

The efficiency of investment

Chenery and Strout's (1966) two gap model assumed the ICOR to be constant. Griffin (1970) questioned this assumption, asserting aid-financed investment to be less productive than that financed from domestic resources. Since he also argued that aid displaced domestically-financed investment, the average productivity of investment will fall with the aid inflow.¹³

Defenders of aid may argue to the contrary that aid increases the productivity of investment through the provision of technical assistance or enhancing the transfer of technology. The microeconomic evidence on these issues is necessarily mixed since there are both good and bad aid projects. Unfortunately no theoretical or empirical work has explored these issues at the macroeconomic level, except a couple of attempts to regress the ICOR on aid - Voivodas (1973) and Rana (1987). The development of such analysis should be high on the list of any research agenda on aid issues.

2.4 Summary

There is a comprehensive literature on the macroeconomics of aid, but it offers few conclusive findings. The conclusion that aid does not significantly contribute to growth is not empirically robust and there are theoretical and empirical weaknesses in most of the discussion of aid's impact on savings. Studies which look at aid, imports and investment - including through government's fiscal response - find some evidence of aggregate and categorical fungibility, but not so much as to justify excessive pessimism concerning aid's impact. The cross-country approach which has characterised the literature cannot be relied upon to give reliable results. We will learn more about aid's macroeconomic effects from detailed analysis of individual recipients, as presented in Chapters 5 to 8 of this report.

Notes to Chapter 2

1. This identity may be presented in a number of ways through various aggregations and/or disaggregations - the most usual of which would be to present capital inflows net of amortization so that only interest payments appear on the left hand (current transaction) side of the equation.
2. By the UN's *System of National Accounts* (SNA) grant aid intended for investment purposes should appear in the capital account as capital grants. Some economists dispute this method, arguing that only inflows carrying with them a repayment obligation should appear in the capital account. And in practice most countries do not follow the SNA recommendation but instead record all grant aid (that intended for both consumption and investment) as an official transfer. Although transfers are a current account item it is a common practice to treat OT as an "intermediary item" and report the current account with and without official transfers. Such a practice is commonly adopted by the World Bank and IMF and has important implications for the macroeconomic analysis of countries with high aid inflows.
3. One method of measuring capital flight is through errors and omissions, so that the aid may be accommodated through changes in EO.
4. The derivation of equation (5) comes from the combination of $GNS-I = X + NTR + NFP - M$ (where GNS is gross national savings, NTR is total net transfers, i.e. $PCT + OT$, and NFP total net factor payments, i.e. OFP plus net interest payments) with equation (4). (Note $GNS = GDS + NTR + NFP$ - though whether OT is included in GNS varies from case to case; what is important is to use the identities consistent with the given treatment of OT).
5. If the fiscal gap is not binding in these models then the government investment function determines I_g and I_p is determined as a residual.
6. The studies estimate the equations in log form and then use simulations to examine the impact of an increase in aid - its is therefore not straightforward to say whether the incremental change is significantly different from unity (and such a test is not attempted in any of the studies).
7. Stewart (1970) pointed out that multiplier effects from aid may raise import demand over and above the value of the aid inflow - the consumption function used here implicitly allows for such an effect. The simple investment function may be viewed as a reduced form incorporating direct effects and crowding in/out (see White and McGillivray, 1992).
8. But it is also shown that this result is a statistical artifact which follows from the method used for estimating the target equations.

9. A recent paper by Pack and Pack (1993) presents the same analysis for Dominican Republic.
10. The word significantly is used in this sentence to mean "much" since, as already discussed, formal tests of significance can not be performed using the results of these studies.
11. It is not clear why Pack and Pack excluded one equation from their system. If all equations are included then the cross-equation restriction most likely will not hold unless it is specified in the system prior to estimation: 3SLS allows the imposition of the restriction.
12. The budget constraint also excludes non-project aid, which should be added.
13. If the two effects are sufficiently strong aid may therefore have an adverse impact on growth.

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CHAPTER 3

MACROECONOMIC EFFECTS OF AID-SUPPORTED POLICY REFORM

3.1 Introduction

The conclusions to a recent volume on the role of capital inflows in development (Lele and Nabi, 1990a) deliberately avoided quantifying the contribution of these flows to growth. The reason given was that the country case studies showed domestic policies to be the primary determinant of a country's development (Lele and Nabi, 1990b) - the role of government, aid and policies is too complex to disentangle. Whilst not agreeing that we should not at least try to answer the question "can aid work without reform?" it is undoubtedly true that policy stance is a vital factor in macroeconomic performance. In this chapter issues concerning the assessment of the impact of aid-supported policy reforms are discussed.

The first analyses of policy conditionality (e.g. Killick, 1984) focused on IMF stabilisation programs and were critical of the excessive emphasis on demand restraint to restore balance of payments equilibrium. In more recent years the study of World Bank adjustment programs has led to a slightly more positive consensus. Most studies find the investment rate to suffer as a result of adjustment policies (e.g. Mosley *et al.*, 1991; World Bank, 1988, 1990 and 1992). The effect on growth, however, is usually positive - but often weakly, or even insignificantly, so (e.g. Mosley *et al.*, 1991; World Bank, 1988 and 1990 - but not 1992, which reports a significant positive impact). The effect on the balance of payments is negative (Mosley *et al.*, 1991; World Bank 1988) - largely because of the import surge following trade liberalization and the weak or slow supply response of exports (World Bank, 1990 - again the 1992 report finds a stronger export response).¹ There is also agreement that adjustment policies have worked better in middle-income countries than low-income ones (e.g. World Bank, 1992:

21). However, there are a number of methodological issues that need to be addressed before these findings may be accepted.

For aid-supported policy reforms to have a beneficial impact on a country's economic performance, two conditions must be satisfied. First, the donor presence must make a difference to the reforms that are implemented. Does the presence of aid donors make for better policies or does aid, as critics maintain, allow recipient governments to pursue unsustainable and misguided policies? Second, the reforms that do take place must have a positive impact on performance. These two issues are analytically distinct.

If the reforms would have gone ahead even in the absence of the aid we may still be interested to learn the economic impact of such reforms (since they are the types of policy which donors support) - but the impact of the reforms cannot be directly attributed to the aid. It is therefore important to address the two questions separately, as we do in Parts 3.2 and 3.3 respectively. Part 3.4 draws out the implications of this chapter's discussion for analysis of aid's macroeconomic impact.

3.2 Does Aid Affect Policy?

The World Bank's reviews of adjustment lending (1988, 1990 and 1992) have reported indicators of "compliance" - that is the extent to which countries have actually implemented the reforms outlined in the various agreements relating to adjustment loans. One such report says that:

Overall, almost three-quarters of the conditions were fully implemented by final tranche release and 88 per cent were substantially implemented.

(World Bank, 1992: 81)

Compliance appears strongest on exchange rate policy, below average on trade reform and way below average for wage policy. Average levels in compliance in sub-Saharan Africa do not differ from those elsewhere, though the region's performance is worse in certain areas (notably fiscal and monetary policy; World Bank, 1992: 84).

Mosley *et al.* (1991 Volume 1: 134-145) argue that these compliance measures do not give an accurate picture of the extent of reform since some measures are very easy to implement whereas others may prove impossible to do so because of either poor design or changes in the external environment. If our concern is to trace causation from aid to policy to performance we must take their argument very seriously: compliance simply is not a measure of the degree of reform, and so is not a suitable variable to use in such analysis. There are two problems here. Since compliance measures cannot tell us the extent of actual changes which have occurred they cannot tell us how much reform aid has really supported. Second, these indicators are therefore not the appropriate variable for analyzing the macroeconomic impact of reform. This latter point is returned to in Part 3.3.

Furthermore, compliance indices are a form of before versus after approach - all changes in policy since the start of adjustment borrowing are attributed to that borrowing. No attempt is made to determine the policies that would have occurred in the absence of the adjustment loan. However, before versus after comparisons are not a valid basis for drawing analytical conclusions, least of all for determining causality (Goldstein and Montiel, 1986; and White and Luttik, 1994: Chapter 2).

But a more serious underlying problem is that the presence of a program is not the relevant exogenous variable, it is the policies which are pursued - this point was partly recognized in the World Bank's (1992) third report on adjustment lending, which suggested that the analysis of the impact of adjustment borrowing should consider policies rather than the simple presence of adjustment borrowing. This suggestion has been followed up in an internal review of the adjustment experience in sub-Saharan Africa.² In the latter report a macro policy performance indicator is constructed which is a composite of measures of exchange rate policy, fiscal stance and monetary restraint for twenty seven countries. The changes in performance between the periods 1981-86 and 1987-91 are then calculated.

This approach is an improvement over the compliance approach as a variable is defined to capture the degree of policy reform. But the methodology remains before versus after. No

attempt is made to analyze whether or not the reforms would have occurred in the absence of the aid. To answer such a question requires a model of the reform process. The modified control group approach is one simple way of modelling what policy would have been in the absence of the program - but no studies applying this approach have reported this aspect of their findings.³

Judgements on likely policy scenarios in the absence of the adjustment program are probably best made by more in-depth analysis of the political economy of decision making in the country in question. For example, in the Tanzanian case, it is likely that the government would have attempted reform without donor support (indeed it had been doing so during the period of dispute with the IMF). But it is questionable whether these reforms would have been either politically or economically sustainable in the absence of the aid money.

The Tanzanian example illustrates a second point - the role of aid in hindering or supporting policy reform can change markedly over time. Many would today identify the support given to Tanzania's villagisation program in the 1970s as a prime example of how aid has supported detrimental levels of state intervention. Import support received by Tanzania during the 1980s was often allocated to parastatals, reinforcing rather than restructuring the industrial sector. However, as indicated in the previous paragraph, the aid donors have probably has a positive impact on the reform process in the 1990s.

A final decision on the aid-policy relationship can only come from case studies of actual cases, with comparative analysis to draw out overall lessons. There has been little such work on a systematic basis: though the review by Cassen *et al.* (1986: Chapter 8) concludes that in general aid has been more beneficial to private sector development than harmful. The findings of Mosley *et al.* (1991) are less favourable, suggesting that the commitment of many governments to reform has been weak, and that non-compliance has not been punished. Finally, the more technical issue of whether reforms which have short-run adverse impacts are sustainable without additional financial flows can in principle be analyzed through models of how policy changes affect the economy. Such models are the subject of Part 3.3.

3.3 Modelling the Macroeconomic Impact of Policy Changes

The before versus after and control group approaches are much used in the analysis of the macroeconomic impact of adjustment policies. But given the inadequacies of those approaches, such studies are not considered further here. Instead we concentrate on the modelling approach. Rather than present a whole range of models some key conceptual issues are discussed: (i) distinguishing adjustment policies from adjustment *per se*; (ii) measuring adjustment policies; (iii) the use of dummy variables to model structural change; and (iv) dynamic aspects of some results. A brief discussion of some of the key relationships follows.

Distinguishing adjustment from adjustment policies

The term "adjustment" is used to refer to two, quite distinct, phenomena. All agree on this distinction, but it is not always clearly made, and this failure to distinguish results in confusion.

The external environment facing an economy is constantly changing. In the early 1980s these changes were large, abrupt and mostly unpleasant. Economies automatically respond to such changes through a variety of price and quantity adjustments - this may be called automatic adjustment. Such automatic adjustment may well put the economy on a low growth path, so that governments wish to intervene in the adjustment process to enable the economy to grow in the context of the changed environment. Such interventions are adjustment policies. As just mentioned, all developing economies were *per force* involved in substantial automatic adjustment during the 1980s and nearly all have responded, at some stage or other, with recourse to adjustment policies.

In both senses then, the 1980s were "a period of adjustment" - the term adjustment here referring to the eighties and not specifically either automatic adjustment or adjustment policies. However, this correct observation can lead to ambiguous statements such as the following:

Private investment has fallen during adjustment in all cases - with no sign of recovery by 1988.

(Fitzgerald and Sarmad, 1990: 41)

.. our results suggest a sizeable output loss because of lower aggregate investment levels during the period of adjustment under IMF-WB lending.

(Faini *et al.*, 1991a: 964)

In both of these cases the authors are referring not to the impact of adjustment policies but simply to what happened during the 1980s - the period of adjustment. Whilst the above cited papers are (reasonably) clear on this point - they are not laying the blame for lower investment at the door of adjustment policies - the terminology makes the statement ambiguous, open to misinterpretation, and, in the hands (or mouths) of the less scrupulous, simply incorrect. Others are quicker to make the "sleight of mind" whereby the responsibility for poorer performance during the period of adjustment policies make this poor performance the fault of those policies: indeed this tendency is intrinsic to the before versus after approach, and hence one reason for rejecting the method.

Our concern is to examine how adjustment policies influence macroeconomic performance -that is, to disentangle this influence from the automatic adjustment necessitated by external shocks suffered by developing countries during the 1980s. In order to conduct such an analysis we must have a measure of adjustment.

Measuring adjustment

It is common to model the impact of adjustment by using an "adjustment variable" which commonly takes one of three forms: (i) a dummy variable which is one in the presence of a program and zero otherwise (e.g. Corbo and Rojas, 1992); (ii) a measure of the "intensity of adjustment", usually by a compliance index (e.g. Mosley *et al.*, 1991); or (iii) the value of adjustment lending (e.g. Mosley *et al.*, 1991). None of these measures are adequate. The use of a dummy variable to capture the effects of adjustment is flawed for two reasons: (i) it does

not measure the extent of reform; and (iii) it does not allow fully allow for structural changes in behavioral relationships. As mentioned above, different programs require different measures and so the extent of reform is not indicated by the existence or otherwise of a program. Moreover, the degree of implementation varies greatly between countries.

This latter problem is not resolved by using a compliance indicator since the first problem - the policies to be complied with differ between countries - remains (and there is a second problem that different countries may comply with different conditions). Compliance simply is not a measure of the extent of reform - although it has been used in this way. For example, the third report on adjustment lending presents a table of regression results for the macroeconomic impact of adjustment policies "corrected for implementation" (World Bank, 1992: 28). This correction has been applied by "making the adjustment variable equal to intensity by the percentage of conditions fully or substantially implemented". The study of Mosley *et al.* (1991) includes a compliance indicator as an explanatory variable, as well as the value of Bank adjustment loans and drawings from the IMF.

The second problem with the use of dummy variables is that there may be a structural break in the slope of behavioral relationships, whereas the use of the dummy allows only for changes in intercept. For example, financial market liberalization may make private investment more responsive to changes in the interest rate as administrative controls on credit allocation are relaxed - this change is a rotation, not a shift, of the investment function. This problem can be handled by using a slope dummy for the adjusting countries/period of adjustment - a solution that can be less clearly applied if a compliance indicator is being used. Slope dummies allow for changes in the nature of economic relationships rather than just imparting exogenous shifts to these functions. Making such an allowance is particularly important if the approach adopted is to model policies rather than the presence of a program.

The third measure of adjustment, that is the value of adjustment-related borrowing, bears no relation to either the extent of intended reforms or compliance with these intentions. As Mosley *et al.* themselves indicate, lending is little related to compliance. Nor can the approach

be interpreted as separating out the effects of the aid funds from those of the policies. As explained, the compliance indicator is not a good measure of policies. To measure the effects of aid monies then all aid, not just adjustment lending must be included - particularly since the balance of payments support provided by most bilateral donors is also conditional upon adjustment policies. Ideally, both balance of payments support and other aid will appear in a model of aid impact, but as separate variables, since as discussed in Chapter 4, different types of aid should be expected to have different macroeconomic effects.

None of the existing measures of adjustment therefore seem very satisfactory: but in fact it does not matter. There is an analogy here with the literature on the macroeconomic effects of aid. Attempts to estimate the aid-growth link directly were misplaced - analysis should concentrate on the channels through which the link is expected to operate.⁴ Similarly, we cannot regress macro performance directly on adjustment programs - we should instead trace and quantify the links from reform to changes in exogenous (policy) variables to changes in outcomes.

The importance of identifying the policies through which adjustment lending has its effects carries over to the usefulness of the analysis as a tool for appraising policy. The use of dummies or comparisons of adjusting versus non-adjusting leaves the processes through which adjustment achieves its results inside a black box - which is of no use in the design of adjustment programs. It is necessary to open the box to see which bits are working (and which are not).

Single equation models

Single equation estimation has been a common approach in the literature (e.g. Mosley *et al.*, 1991; Faini *et al.*, 1991a; and Corbo and Rojas, 1992). All of these studies estimate a number of equations modelling the behaviour of key macroeconomic aggregates. All of these include on the right hand side (possibly with lags) variables that are also used as dependent variables.

In the study of Mosley *et al.* this practice results in a problem of simultaneity bias in their estimation, and we would also expect a loss in efficiency. Hence their results, which contain very few significant relationships, may not be relied upon. The systems estimated by Corbo and Rojas (1992) and Faini *et al.* (1991) are not simultaneous in the current period and so bias does not result from the estimation procedure. But the models do implicitly contain different short and long run effects which are not discussed. In the former study, the change in growth, the investment and savings rate and the export ratio are regressed on the lagged values of each of these variables and three exogenous regressors: a shock variable, the fiscal deficit (which probably ought to be endogenous), and an adjustment dummy.⁵

Regressing the change in a variable on its own lagged value (and other regressors) will give identical results to regressing the level of the dependent variable on the same set of regressors, except that the coefficient on the lagged dependent variable in the latter regression will be one plus the coefficient in the former regression. Stated thus, it is clear that in Corbo and Rojas' model adjustment policies affect current growth, investment, savings and exports which will, in turn, affect all of these variables in the next period.⁶ The long run effects may well be very different from the impact effects.

The results from simulations of the impact of the introduction of adjustment policies using the four equations reported by Corbo and Rojas are shown in Table 3.1. The differences between short and long run effects are, except in the case of investment, marked. The beneficial impact of adjustment policies on growth and savings are reinforced, especially that on the savings rate. On the other hand, the positive response of the export rate is more than halved.

The study by Faini *et al.* is similar, except that rather than the savings rate and exports they use the rate of inflation and current account deficit (as a per cent of GDP) as endogenous variables. As shown in Table 3.1, the effect of the dynamic simulations is even more dramatic using the coefficients from their study.⁷ The negative impact on growth is strongly reinforced so that the growth rate falls by 1.6 percentage points, rather than only 0.1 percent. Despite this fact the impact on all of the other indicators is improved: the adverse impact on the investment

**Table 3.1 Short and long run impact of adjustment
policies on macroeconomic aggregates**

	Impact effect	Long run effect	Ratio
Simulations using results of Corbo and Rojas			
Change in			
growth of GDP	0.016	0.020	1.2
investment rate	-0.035	-0.035	1.0
savings rate	0.014	0.115	8.2
export ratio	0.065	0.028	0.4
Simulations using results of Faini <i>et al.</i>			
Change in			
growth of GDP	-0.001	-0.016	16.1
investment rate	-0.006	0.025	-4.2
current account (% of GDP)	0.034	0.063	1.9
inflation rate	0.008	-0.001	-0.1

Source: own simulations based on results reported in Corbo and Rojas (192) and Faini *et al.* (1991a).

rate and inflation are both reversed and the long run improvement in the current account is nearly double the impact effect.

Reviewing the results

This chapter begun by saying that there is something of a consensus over certain key relationships. But it has been argued here that cross-country regressions are not the best way to carry out the analysis - rather a country-specific modelling approach is required. Does the consensus stand up in the face of the evidence to date from such studies? The answer to this question is "not particularly" - here a range of the factors that need be considered are listed.

(a) Growth

Cross-country analysis of the determinants of growth is theoretically problematic (White, 1992) and has been shown to be empirically unrobust (Levine and Renelt, 1992). Country-specific economic models may also be poor predictors of growth, unless exogenous factors are both included in the model and their time paths accurately forecast. Nonetheless, such models may still indicate whether certain policies are "good for growth" (bearing in mind the possibility that changing external conditions may require different policies). The model developed at the OECD to analyze the impact of adjustment on poverty (Bourguignon, *et al.*, 1989) has tended to find a positive impact of adjustment on growth (compared to a base run of the types of external shock typical to developing countries in the 1980s) - though purely contractionary policies (which may be best characterized as stabilization) do not always have such a favourable impact.

(b) Investment

Investment ratios have undoubtedly fallen in the 1980s (hence the before-after approach finds adjustment to be bad for investment). It is worth remembering that this fall was from a historical peak in investment ratios reached by most countries around 1980 - this peak was fuelled by the excess international liquidity of the 1970s and was not necessarily very productive. Nonetheless, the apparent failure of adjustment policies to stimulate private investment has rightly been a cause for concern and led to a renewed interest in private investment in developing countries.

The conclusion that can be drawn from this literature is that the determinants of private investment are many, and the actual driving force likely to vary from country to country. Some main debates are:

- crowding in versus crowding out: some argue that the falls in government investment associated with adjustment and/or stabilization are a main cause of declining private investment (e.g. Taylor, 1988; Serven and Solimano, 1992; and Mosley, 1992); others (e.g. Benjamin, 1992) assert the more conventional view of crowding out that government expenditure will increase recourse to deficit financing and therefore reduce credit availability to the private sector (either through quantity rationing or changes in the real interest rate). The general decline in absorption at the outset of stabilization or adjustment will (often through expectationary mechanisms) reduce investment. The issue is clearly an empirical one, and both the type and financing of investment will be important in determining the outcome in any particular case.
- the role of financial liberalization: the McKinnon-Shaw view that liberalizing interest rates will stimulate investment (by increasing savings availability) has found a number of critics, for reasons including the following - (i) higher interest rates alter only the composition not the level of savings (see review by Fry (1988: Chapter 6) and the argument by Morisset (1993) on portfolio effects of higher interest rates); (ii) in a standard structuralist model (e.g. Taylor, 1983) higher interest rates push up costs and prices because of fixed working capital requirements, but do nothing for investment; and (iii) the interest rate may go "too high" for productive investors (Roe, 1982 and Rittenberg, 1991).
- the role of uncertainty has been stressed by several writers, investors must be confident that the reforms will remain in place (the incentive structure will not change) if they are to invest. This aspect is one of the most difficult to model.

- exchange rate policy is an important determinant of investment, although there is some ambiguity, most channels (e.g. contractionary impact and higher cost of capital goods) suggest a reduction in investment as a result of a devaluation.

In addition to these relationships the possibility of increasing the efficiency of investment (through financial liberalization, removal of other administrative controls etc.) need also be considered. Evidence from returns to World Bank supported projects show the returns to be higher in adjusting economies (World Bank, 1992: 33).

(c) The current account

Rather than estimate the response of the current account to the adoption of an adjustment program it is more enlightening to consider how imports and exports respond to changes in relative prices brought about by devaluation, relaxation of price and quantity controls, changes in subsidies and infrastructural development/decline.

The flood of imports from trade liberalization has been one concern of critics of adjustment, who now claim that sub-Saharan Africa is undergoing "deindustrialization" (e.g. Stewart, 1991) - though the data on this point are not conclusive. A World Bank study of twenty countries covered by the Special Programme of Assistance found that the share of consumer imports barely rose (from 9.8 to 11.3 per cent of total imports) between 1985 and 1990 (World Bank, 1994b: 22). A similar result is reported for the case of Tanzania by Doriye *et al.* (1993). On the positive side is the possibility that the removal of quantitative controls will allow a more appropriate import mix, but little analysis has been done of this issue. Models should try and analyze imports at least at the level of capital, intermediate and consumer goods since (i) different policy regimes and aid flows will alter this composition; and (ii) the import mix influences the import-output elasticity.

More attention has been paid to the supply response of agriculture. Some cases (e.g. cocoa in Ghana) seem to have been successful, whereas in others the response is more sluggish. Estimates of supply elasticities are often low - and even negative (see Chhibber, 1989; and

Binswanger, 1989). This sluggishness is blamed on: (i) lack of supporting infrastructure; and (ii) incomplete implementation of reforms. To cater for (ii) models should be sure to use the real producer price received by farmers (relative to alternative cropping opportunities). Proxies for (i) are harder to obtain since they are very region specific and relevant data (say on travelling times to market) not readily available.

Aid-supported policies versus aid monies

It has been argued several times in this report that good modelling can provide the basis for separate analysis of policy reforms and the impact of aid inflows. One study (Radelet, 1991), entitled "The Gambia's Economic Recovery: policy reforms, foreign aid or rain?", explicitly embraces this use of a CGE model. Radelet reports that all three factors listed in the title contributed to growth - and, moreover, that all three together contribute more than the sum of the three individual effects:

When simulated individually, the effects from the policy package (5.1 per cent), foreign aid (4.7 per cent) and rainfall (2.9 per cent) account for a total of 12.7 per cent growth in GDP. Yet when the exact same changes are modelled simultaneously from the same base, output grows by 14.9 per cent.

(Radelet, 1991: 34)

Thus a combination of reforms and aid is superior to either one alone. The increased combined effect (which Radelet ascribes to "synergistic" effects) must result from feedbacks in production and consumption, since the model does not allow for changes in structural relationships (for example, a stronger supply response) under the reform program. Moreover, the modelling of aid is quite simple - appearing in additive form in the investment function, but not affecting the government budget equations nor (directly) import demand. The model could therefore benefit from incorporating further aspects of the literature from the macroeconomic analysis of aid.

3.4 Summary

Aid's critics have argued that aid can reinforce the position of the state and help sustain misguided policies. Such a criticism seems somewhat dated given the importance donors

themselves have placed on policy reform in the last 15 years. The more relevant issue now is the extent to which donors are successful in having the policies they propose adopted.

Much of the adjustment literature has asked "what is the impact of adopting an adjustment program?". This seems to be the wrong question - the right one is "what effects do these policies have?". This is the right question as we can more reliably measure a policy than a program, and because we want to know which policies in a program are good ones and which ones not. We are therefore led to adopt a modelling approach - which should allow the separation of shocks (including aid inflows) from policies. Neglected aspects of the models that have been used are: (i) allowance for structural change as a part of the reform program, and (ii) explicit allowance for the effects of aid in accordance with the impacts discussed in Chapter 2.

Notes to Chapter 3

1. *In interpreting results from the current account two points need also be borne in mind: (i) devaluation from a deficit position will worsen the deficit as a per cent of GDP; and (ii) increased aid supporting the adjustment program will also worsen the current account. It is not clear that all studies have allowed for these effects.*
2. A revised version of the study referred to here as been published as World Bank (1994a).
3. The modified control group approach was developed by Goldstein and Montiel (1986) and has been applied in recent World Bank reports (1990 and 1992).
4. Some studies - for example Doroodian (1993) - use both policy variables and an intercept dummy for the presence of an adjustment program. The correct interpretation of the results from such a regression are unclear.
5. The use of both investment and savings rates as regressors may well lead to problems of multicollinearity - a possibility that may explain the insignificant coefficients on these two regressors in most of the equations.
6. The regressions reported by Corbo and Rojas use time periods of five to ten years - that is the data are not annual. Long run effects would therefore take a very long time to run through the system. The simulations are reported to underline the importance of analyzing all aspects of a model.
7. The authors do not report the constant term. We used that from Corbo and Rojas where possible and a guesstimate for the other equations. The use of an arbitrary constant is unimportant since the term drops out of the results which show the change between periods. The reported inflation equation is explosive (the implicit coefficient on the lagged dependent variable is 1.077) - whilst such a coefficient may capture situations of hyperinflation it is not conducive to a stable equilibrium to analyze the effects of policy experiments! To conduct the simulations the inflation equation was "dampened" by using instead a coefficient of 0.9.

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CHAPTER 4

MACROECONOMIC EFFECTS OF DIFFERENT TYPES OF AID

4.1 Introduction

Historically aid flows largely consisted of three types: (i) project aid; (ii) commodity aid; and (iii) technical assistance. During the 1980s first the World Bank and then the bilateral agencies channelled an increasing share of aid in the form of balance of payments support. Balance of payments support (also called programme aid) may either be import support (foreign exchange not tied to the implementation of a specific project) or debt relief (forgiveness or reduction of the debt to the donor itself or, increasingly, payment by a bilateral donor of a recipient's IFI debt). The rationale for the shift to programme aid was that the tightening foreign exchange constraint - particularly evident in much of sub-Saharan Africa - restricted imports of intermediate goods, resulting in declining rates of capacity utilisation. An alternative view is that the IFIs supported programme aid as it was rapidly disbursing and highly fungible, and therefore could support recipient's efforts to meet their debt service obligations.

Although it has been observed that different types of aid may be expected to have different macroeconomic effects (Cassen, 1988), little attention has been paid to discussing what these effects may be. This chapter discusses the issues: starting with project aid (Part 4.2) and then debt relief (4.3) and import support (4.4). Parts 4.5 and 4.6 consider macroeconomic issues related to food aid and technical assistance. Part 4.7 concludes. A model, which incorporates the differential aspects of different types of aid, is presented in the technical appendix to this chapter.

4.2 Project aid

Archetypal project aid was of the type assumed in the two gap model - the aid was to support an investment project and only to pay for the import component of that investment. The traditional macroeconomics of aid mostly assumes all aid to be project aid, so that the macroeconomics of this type of aid is covered by the issues discussed in Chapter 2.

Donor policy limiting their involvement to the costs of imported capital had adverse macroeconomic effects through the pressures it puts on the capital budget to meet local and recurrent costs for an ever-growing number of projects. In practice, many projects were unsustainable since no funds were available at the end of the donor's support.

Increasingly, however, donors are willing to finance the local cost component of projects. Indeed, some sectors (such as health and education) may have a very low import content. Stewart (1970) long ago pointed out that if a government wants to, say, build a school using wholly local resources the signing of a cheque by a donor for a certain amount of foreign exchange is irrelevant to this transaction. However, he argued, the provision of the forex is necessary since the construction activity will have multiplier effects which stimulate demand, including that for imports. These days also we are less willing to accept that government can just print money to finance desired local expenditures - government can sell the forex to raise the local currencies required for the expenditure. The effects of this transaction of the money supply are discussed below where the issue of the counterpart funds from import support is considered.

Hence, project aid for the forex component of the project is expected to result in an equivalent rise in imports. What happens in practice of course depends on fungibility. The local cost component provides some free forex, though the forex will end up in the hands of the private sector not government. It may be used for imports - but it could equally be used for any of the other transactions listed in equation (2.2).

What of project aid and investment? Again the traditional approach was that there should be a one-for-one relationship. Recurrent costs of the project were the responsibility of government. The large numbers of projects undertaken over the years have meant that it is simply not possible for recipient governments to fulfil all these obligations. Faced with the choice of providing recurrent finance or letting projects fail, donors have increasingly chosen the former option. If properly accounted for, these expenditures will show up in the accounts as an increase in government consumption - so that the aid is accommodated through a fall in both government and gross domestic savings. Which, to repeat a point made above, is not to say aid causes a fall in savings, as such an argument must also examine what happens to income.

4.3 The macroeconomics of debt relief

There are two important issues in discussing the macroeconomic effects of debt relief: (i) whether the debt would have been paid in the absence of the debt relief and (ii) if there is a debt overhang. These two aspects are shown together in Table 4.1.

Table 4.1 The macroeconomic effects of debt relief

		Would recipient pay debt in absence of debt relief?	
		No	Yes
Does the relief alleviate debt overhang?	No	No effect	Increase in free forex
	Yes	Stimulate investment	Increase in free forex and stimulate investment

If the recipient would not have paid the debt in the absence of the relief, then the relief does not directly contribute any new resources - if properly accounted the debt relief flows in on capital account (if a loan) or current account (if a grant) and the inflow is immediately offset by an equivalent outflow on either or both capital account (for relief on principal payments or capitalised interest arrears) and current account (for relief on interest payments). On the other hand, to the extent that the recipient would have paid the debt, then the relief is equivalent to

free forex, since the money that would have been used in payment is now available for alternative uses.¹

Debt overhang is the notion that investment is constrained by high levels of debt, a mechanism which can operate through several channels (see Borensztein, 1990; and Serven and Solimano, 1992: 107). First, considerable uncertainty surrounds just how burdensome the debt burden will be, since fluctuations in interest rates, the exchange rate and the terms of trade all affect the size of the transfer necessary and, therefore, the trajectory of government's fiscal and monetary policy. Second, a highly-indebted country will be credit constrained through lack of access to private international capital. Third, repayment obligations act as a foreign tax on current and future income. And, fourth, the likelihood of meeting debt obligations is greater the lower are those burdens² - so the government has less incentive to abandon stabilisation and adjustment programmes conditional upon meeting debt service obligations. Hence, reducing the debt burden may stimulate both foreign and domestic investment in the recipient country, even if the debt relief itself directly provides no additional funds. Aid will not alleviate debt overhang either if there is no problem of overhang in the first place, or if there is a problem but the relief is insufficient to eliminate it.

If a country is in the top left hand-corner then the debt relief is a mixture of a rescheduling device and softening the terms of past lending; indeed the expression "retroactive terms adjustment" (RTA) has been applied to such monies. They have also been called "unintentional past aid" (Faber, 1992) - since flows which did not qualify as aid at the time on account of having an insufficiently high grant element would now qualify as aid if the present value of actual repayments (rather than those initially scheduled) were to be used in the calculation.³

4.4 The macroeconomic effects of import support

The increase in balance of payments support in the early 1980s was largely import support. Winpenny (1989: 262) lists the following five advantages of this form of aid:

- disbursements are not limited by recipient absorptive capacity;
- funds to utilise existing investments are more important than undertaking new investments;
- non-project aid can be rapidly disbursed;
- the aid can be readily linked to policy conditionality (it is easier to turn "on and off" than project aid);
- the countervalue from the sale of goods or forex have a beneficial impact on the government's budget.

The use of aid for import support raises the following macroeconomic issues: (i) how does such aid affect the composition of imports? (including the issue of categorical fungibility), and the macroeconomic consequences of the different categories of goods (consumer, intermediate and capital); (ii) the extent to which aggregate fungibility frees up forex for other uses (capital flight, reserve accumulation etc.); (iii) whether import-support financed goods displace the market for domestic production; and (iv) the collection and use of counterpart funds. Each of these issues is now discussed in turn.

Import composition

Import support may take one of two forms: administrative and market-oriented. Administrative schemes allocate the forex, usually by committee, to applicants according to criteria agreed between donor and recipient. Alternatively, the donor may allocate import support funds for a particular commodity (e.g. fertilizer), often with agreed channels for distribution. Developing countries facing a foreign exchange constraint typically have developed elaborate administrative mechanisms for the allocation of available forex - Zambia's FEEMAC is an example of such a scheme - and administrative import support is often an extension of such schemes.

Market based schemes distribute the forex *via* market mechanisms, either an Open General Licence (OGL) system or an auction to commercial banks/bureaux who sell to importers at a market-determined exchange rate. Donors may place some restrictions as to which goods may be imported with their import support. Historically there were "positive lists" of approved goods, but these have been replaced with ever shorter "negative lists" of prohibited goods.

A common criticism of import support schemes is that the aid pays for "non-essential" luxury imports which do not contribute to recipient growth. One agency official in Lusaka commented that OGL money is used for "beer and biscuits"; others point to the increasing number of Mercedes and BMWs seen in African capitals and say "that's OGL money". In fact, this criticism may be one of three arguments:

- corruption - malpractice in administering the import support allow it to be used for luxury goods (e.g. Mercedes);
- categorical fungibility - because of the import support government can now allow free forex to be used for luxuries, whereas in the absence of the aid it would have been used for essentials.
- opposition to negative list - if import support is used for Mercedes this fact must arise either from corruption or fungibility, since these are on the negative lists of countries operating OGL schemes; but if the argument is against "beer and biscuits" this is an argument against an OGL system which is functioning 100 per cent in accordance with its rules, since these are not prohibited uses of the funds.

Of course it is not desirable that import support funds should be misused so that the powerful use them to import luxury goods (or even to give preferential access to certain groups to import allowable items). However, administrative schemes have far more potential for being open to abuse: being administered by government departments in which rent-seeking has become a fact of life, and which are very open to the workings of the patronage system. By contrast,

the anonymity of the market mechanism is more likely to avoid interferences. The "invisible hand" is an ideal type for many developing countries, especially in credit markets which have experienced years of government intervention in credit allocation, including directing credit to favoured individuals or groups on advantageous terms. Of course, developing country markets do not function according to the invisible hand of economics textbooks. Since a well-functioning OGL system requires the independence of the banking sector from government, donors attach considerable attention to the administration of import support funds. Winpenny (1989) and Doriye *et al.* (1993) argue that in fact donors are over-concerned with these issues - these arguments are returned to in Chapter 9.

Despite the greater potential for corruptibility, some prefer the administrative system because it allows (ignoring for the moment the possibility of fungibility) the donor to be sure that the funds to be used for imports seen as necessary for the recipient's growth. As one Japanese official in Lusaka put it, the funds should be used to support the "three pillars" of the Zambian economy (mining, manufacturing and agriculture). Three counter arguments may be made against this view: (i) the apparently inherent inefficiencies of the allocative system; (ii) analysis of import composition under OGL and similar systems does not show a massive surge in consumer imports; and (iii) if consumer goods act as incentive goods then these goods may well stimulate growth.

Even if not corrupt, administrative allocation may be inefficient. The inefficiency may stem either from the difficulty of "picking winners" or by deliberate use of import support to aid ailing parastatals. An examination of import support need necessarily judge not only its effect on import composition but also by whom these imports are being used.

Aggregate fungibility

Since donors are not seeking specific expenditures from import support - such as a new hospital - then there is a greater likelihood that the aid will meet the necessary requirement for aid to be fungible: that is, the goods would have been bought anyway in the absence of the aid.

If this is so then there may be either categorical or aggregate fungibility, the former having been discussed above.

The likelihood of aggregate fungibility can be overstated. Governments have tended to use their available forex for what they perceive as priority uses (e.g. oil) and these needs continue to be met outside the import support scheme. Therefore, the import support funds are channelled to sectors which have been starved of forex and would not have received any in the absence of the aid. Hence an increase in imports may be expected.

Displacement of domestic production

As mentioned in the previous chapter - and is formalised in the model presented in the appendix to this chapter - import support aid is more likely to have demand displacement effects of the sort argued by Bhaduri and Skarstein (1993). Whether income is diminished by demand displacement requires that: (i) demand is the binding constraint; and (ii) domestic absorption rises by less than the value of the aid inflow. Import support, which is not associated with specific project activities, may be more likely to have such effects.

Counterpart funds

Import support funds are intended to be a grant to the recipient government, but not to the importer. In return for the forex provided to pay for the importers, the importer is expected to pay countervalue ("cash cover") in local currency to government. There are four controversial aspects of counterpart funds: (a) the exchange rate to be used in calculating the importer's cash cover obligations; (b) collection rates; (c) use of countervalue by government; and (d) potential inflationary impact of the funds.

a) Choice of exchange rate

Many developing countries have dual, or even multiple, exchange rate regimes. Import support funds will normally be sold at or close to the official rate - thus making the imported goods cheaper than if the forex had to be purchased on the open market. This implied subsidy opens the system up to rent seeking behaviour, and the possibility for the government to support

the ailing parastatal sector. Some donors have therefore expressed concern that the import support may inhibit, rather than encourage, restructuring.

A point often not appreciated is that donor accounting requirements and restrictions on the use of forex provided as import support can drive a wedge between the market and official rates. The wedge may arise either because of the additional transaction costs associated with procuring import support forex or because of the market segmentation created by restrictions on use. The demand for free forex (that which may be used importation of any goods and services or for capital account transactions) will exceed that for forex which may only be used for a certain set of goods. Thus the market clearing exchange rate for the former category of forex may be higher than for the latter (if the share in total forex use of imports permitted under import support is less than the share of import support in total available forex). This argument provides one possible reason why black market premia have often been resilient in the face of substantial devaluations of the official rate.

b) Collection of counterpart funds

Recipients of import support may receive a "double subsidy". In addition to the subsidy implicit in the choice of exchange rate, companies have often not paid the cash cover anyhow, or at least not in full. In countries in which governments are trying to collect payments arrears of counterpart funds the issue also arises of the rate used to value the arrears. Given the rate of depreciation in some countries, this decision can affect the amount to be paid to a very considerable degree.

Administrative schemes are more prone non-payment of countervalue for a variety of reasons: (i) they are more open to corrupt practices; (ii) governments have used them to assist parastatals whose financial state does not permit them to pay; and (iii) the government does not have the administrative machinery to enforce collection. Under market systems, the commercial bank pays the government (*via* the Central Bank) for the forex up front, and then it is *their* responsibility to collect payment from the importer as part of the commercial transaction.

c) Use of counterpart funds by government

Counterpart funds are raised either by the sale of forex or commodities - debates surrounding the problems of counterpart funds initially arose over PL480 from the United States in the 1960s, particularly in India which was the largest recipient of such aid. Initially a part of the food aid was sold to the recipient in return for local currency for the US' own use in the country (e.g. mission costs) - the balances of such funds rapidly accumulated, so an increasing part was loaned or granted to the government for developmental uses. Over time, it became standard practice to allocate the counterpart funds, usually held in separate accounts, to agreed development projects.

However, that practice is now frowned upon as "double tying". The use of the foreign exchange is tied to particular uses (even if only through a negative list), and accounted for as the use of the donor funds. Hence it is double tying the same money if the donor then also specifies the use of the counterpart funds. The practice is contrary to OECD Guidelines and, for example, SIDA's *Principles of Import Support*, but still engaged in by some donors. One reason for not wanting to double tie the funds in this way is the perceived inflationary impact which may result - sometimes said to be a result of "spending the same money twice".

d) The inflationary impact of counterpart funds

The possible inflationary impact of the expenditure of counterpart funds was a central part of the Indian debate, and has now re-emerged in the African context - despite the fact that the consensus reached in the Indian debate was that there had not been an inflationary impact and the theoretical and empirical arguments advanced for a similar conclusion in the African context (Roemer, 1989; and Bruton and Hill, 1990).

As demonstrated most clearly by Bruton and Hill, we would not in general expect the use of counterpart funds to be inflationary. The payment for the forex by the importer to the government is a reduction in the money supply - the subsequent expenditure of these funds restores the money supply to its previous level - hence there is no overall impact on the money supply. There are a number of caveats to this simple argument. An important one is that the

cash cover may not be collected, but if there is double tying the donor may still require government expenditure to take place.

But increasingly donors do not require any incremental expenditure for their counterpart funds. Rather the funds should be set against expenditures which would have occurred anyway (or even *ex post* against expenditures which have already been made). This practice means that the funds are in practice reducing the need for deficit funding - a usage of counterpart funds explicitly endorsed by SIDA. Hence the counterpart fund procedure has a deflationary impact.

It therefore seems that spending counterpart funds is not spending the same money twice. Nevertheless, the deflationary impact of not requiring incremental government expenditures in response to collecting the cash cover is helpful in restraining inflation when there are other pressures on monetary growth.

Roemer (1989) argues that any inflationary impact of counterpart funds may be further undermined if the economy is foreign exchange constraint. His argument is that in a forex constrained economy a substantial production multiplier may be expected to be associated with any relaxation of that constraint. The consequent increase in output will, through the quantity equation, exert a downward pressure on the price level.

A final word on import support

Import support has become an important form of aid, especially in countries in sub-Saharan Africa implementing adjustment policies. The rationale for this type of aid rests on its assumed macroeconomic effects. These effects are not the same as those of project aid, although the literature on the macroeconomics of aid is written as if all aid were project aid. Import support is known by donors to be highly fungible, and may be deliberately used because of this fact in highly-indebted countries. There need be no impact from import support on investment, since the rationale of this type of aid is precisely to utilise existing capacity, rather than to finance further investment. Yet Dorosh and Lundberg (1993) model the "no adjustment" option in The Gambia through a reduction in government investment by the amount of the assumed

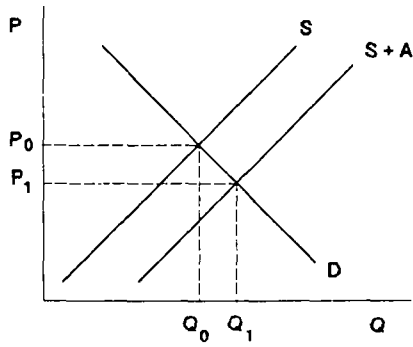
reduction in aid. Yet for most donors it is balance of payments support, not project aid, which has policy conditions attached - and balance of payments support is not primarily intended to increase investment. The work of Dorosh and Lundberg is cited as being a typical example, rather than a particularly bad one, to illustrate the need to allow for different types of aid in the analysis of aid's macroeconomic impact.

4.5 Food aid and disincentive effects

Food aid may generate disincentives to domestic agricultural production through the following channels (Maxwell and Singer, 1979; and Maxwell, 1991):⁴

- a price effect as food aid pushes out the domestic supply curve, hence lowering the domestic price of agricultural output;
- a labour market effect when food aid is used in food for work projects, as wages in these projects are higher than the income obtainable from agricultural production;
- a policy effect as the availability of food aid may allow a government to postpone necessary policy reforms to stimulate domestic agriculture; and
- by changing the pattern of tastes away from domestic output toward "exotic" imported foods.

The main debate has been over the price effect, to which we devote most attention. The possibility of adverse price movements from food aid was first raised by Schultz (1960), who - contrary to general thinking at the time - argued that peasant producers were sensitive to prices. Schultz's analysis, as extended by Fisher, is shown in Figure 4.1, which shows the market for agricultural output. The domestic supply schedule is S and demand D , resulting in an equilibrium price and quantity of P_0 and Q_0 in the absence of food aid. Food aid shifts the supply curve to the right by the amount of the aid (to $S+A$). To clear the market with the

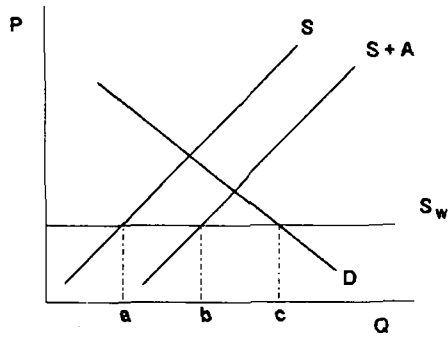
*Figure 4.1***The disincentive effect**

increase supply, price falls. At the new market clearing price of P_1 , domestic output has fallen from Q_0 to Q_1 .

An early and often-cited study is Mann's (1967) finding of a strong disincentive effect in India: showing that food aid imports resulted in a decline in domestic agricultural output of one third of the amount of the aid. However, Mann's analysis was based on the above theoretical framework, which has a number of shortcomings. Further elaboration of the model has resulted in empirical evidence of, at worst, a weak disincentive effect.

The above presentation allowed price to be determined domestically. By contrast, Figure 4.2 presents the same argument with the small country assumption (so that the domestic price is fixed at the world price) - in this case the food aid displaces commercial food imports (which fall from ac to ab) leaving domestic production unaffected.⁵ But donors are not happy for aid to displace imports as this result frustrates the use of food aid as a surplus-disposal mechanism. Hence, usual marketing requirements (UMR) are imposed - by which recipients of food aid must import commercially what they would have done in the absence of that aid. In Figure 4.2 aid and UMR can only be accommodated by forcing the domestic price below the world market price, so that the disincentive effect is present. Donor flexibility has increased on this issue, and although an FAO committee still meets to calculate UMRs (based on recent years' imports) the emphasis is shifting to planning food aid based on national food requirements.

But, the above argument ignores the possibility of the aid generating increased demand. Increased demand may come through two channels. Directly, the food aid is an increase in recipient income (either to government who may then spend the counterpart funds domestically or to consumers if distribution is subsidised). If food is distributed to poor consumers who could not otherwise have purchased it then there can be no displacement of existing demand. Indirectly, the food aid may be used in food for work projects which promote income-generating activities and improved nutrition can enhance productivity. The income increases result in a shift in the demand curve - at least partially (and possibly more than) offsetting the shift in the supply curve so that the adverse price movement is mitigated.

*Figure 4.2***Displacement of commercial imports**

The above considerations have led to a series of studies showing disincentive effects to be weak or non-existent. Isenman and Singer (1977) attributed their finding that domestic output in India fell by only 3 per cent of the amount of the food aid to the fact of subsidised food distribution. Model simulations by Ahluwalia (1979) for India showed disincentive effects from food imports (much of which were PL 480) to be unimportant since it was easy to generate the additional demand for the extra commodities: in fact agricultural output as a whole is shown to rise slightly as a result of foodgrains imports.

By the time of Maxwell and Singer's review of the literature in 1979, they could write that:

it does seem probable that a price disincentive effect on production can be and has mostly been avoided by an appropriate mix of policy tools

(Maxwell and Singer, 1979: 231)

If anything, this view has grown stronger during the 1980s - as donors become more practiced in avoiding disincentive effects and further studies report the absence of such effects (e.g. Bezuneh *et al.*, 1988).⁶

Policy initiatives to minimise disincentive effects are mainly to use food aid in the context of an overall food security strategy and careful targeting of subsidised food aid distribution. Whilst, as indicated above, these efforts have more-or-less eliminated disincentive effects at the national level it is still possible that such effects may operate at the local level. The avoidance of the effect at the local level requires generation of demand, through income earning opportunities) in conjunction with the food aid.

4.6 Technical assistance and the displacement of skilled labour

Aid projects may be expected to generate demand for unskilled labour. With the exception of (these days rare) ill-conceived use of young volunteers, this labour will be provided from domestic sources. By contrast, the requirements for skilled labour are likely to be met by

expatriate personnel. The issue of interest here is whether the use of expatriates substitutes for domestic labour.

Chenery and Strout's (1966) presentation of the two gap model in fact identified three constraints - savings, forex and the capacity to invest, the last arising from a skills gap. Foreign assistance may be required to fill this gap to attain the desired level of investment.⁷ But, as with the other two gaps, sustainable development is only achieved by the closing of the gap, and so the important question is whether TA has contributed to the closure of the gap as well as filling it. At first sight the figures - which show increasing quantities of aid personnel - suggest that the gap has not closed. Why is this?

Technical assistance in fact covers two distinct areas - overseas training and employment of expatriates, the latter nearly always including an on-the-job training component for counterpart staff. Ideally speaking, expatriates will be used where a *genuine* skills shortage exists and then be replaced by local personnel who become available through the two channels of training provided by TA. But whilst the number of skilled people in recipient countries has grown so have the numbers of unemployed graduates and brain drain to developed countries. These phenomena exist despite the high cost of expatriate personnel - estimated to be nearly US\$300,000 a year in much of Africa; even low ranking expatriates are likely to earn ten times more than a government minister (Berg, 1993).

Recent reviews - notably Berg (1993), but also Forss (1990) - have been critical of the failure of institution building *via* technical assistance. This criticism comes despite the acknowledgement of the achievements pointed to by earlier defenders of TA (e.g. Cassen *et al.*, 1986). This failure may partly account for the continued "need" for expatriate assistance. But also important is the "supply-driven" nature of much TA - that is the experts who benefit from the contracts are the ones that benefit. Donor insistence on TA is in part because of its "control" function to ensure aid quality (see Cohen, 1992), but one must suspect that there are considerable material incentives to many advisors to extend their work. By contrast, the line ministry receiving the assistance will often pay less for an expatriate than they would have to

do for a local staff member (TA is most usually grant aid) - so there is little incentive to build up local staff capacity instead.⁸ The highly distorted nature of the market for TA stands in stark contrast to the type of policies donors recommend recipients to adopt for domestic factors of production.

No empirical work has been done on the impact of the estimated 40-80,000 expatriates estimated to be in sub-Saharan Africa on the skilled labour market. But it seems likely that aid has assisted increasing the supply of local skilled personnel but may simultaneously undermine the demand for their services: permitting low professional salaries and encouraging brain drain.

4.7 Summary

Macroeconomic analysis of aid models aid as if it were project aid: that is, intended to complement the imports and investment of the recipient. In fact, even project aid is moving away from this model, and other types of aid may have very different effects. Balance of payments support may go on debt service rather than to increase imports, either obviously so in the case of debt relief or less obviously for import support, which is highly fungible. If, the debt for which relief is given would have been paid in the absence of the aid then the aid is equivalent to a transfer of untied forex. This untied forex may go to pay other debt, accumulate reserves or finance imports. Import support is also not usually intended for capital goods for new investment, but rather to import goods allowing the utilisation of existing capacity. Increasingly import support schemes also permit the importation of consumer goods, partly because of assumed incentive effects.

Economic analysis of food aid has concentrated on a range of disincentive effects through which the aid can displace domestic agricultural production. The established consensus is that these effects do not occur in practice, because of both policies taken to avoid them and the demand generation effects of the food aid itself. There has been less analysis of the possible adverse impact of technical assistance on the market for skilled labour in recipient countries. However, TA has come in for increasing criticism in recent years and one hopes that this issue will be addressed.

The main conclusion to take from this review is that the macroeconomic effects of different types of aid will vary. This chapter has examined what the effects of the main categories of aid may be expected to be. It should be evident that applied work on aid's macroeconomic effects should seek break aid flows down by a functional classification.

Appendix to Chapter 4

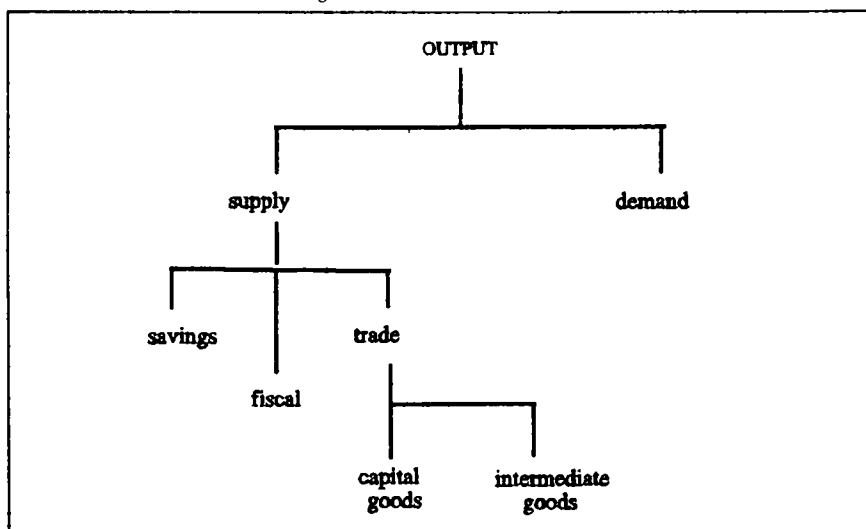
A three gap model of aid impact

The model presented here intends to incorporate various aspects of the macroeconomic analysis of aid into a single framework. Specifically, the model allows for fiscal response, incorporates exchange rate and demand displacement effects, and a third - fiscal - gap. The model was constructed for analysis of Zambia, and is specified to capture structural aspects of that economy.

Whilst the debate on the macroeconomics of aid has developed, important changes have also occurred in the nature of aid. In sub-Saharan Africa a substantial part of the aid programme is now directed to balance of payments support - either debt relief or import support. As has been demonstrated in this chapter, the macroeconomic effects of these forms of aid, and that of project aid, may all be expected to differ from one another. As argued by Doriye and Wuyts (1992), import support may be far more effective in raising output in economies with low rates of capacity utilization than project aid, which merely adds to an already underutilised capital stock. The model in this paper therefore has three separate functional categories of aid.

The Model

Gap models are quantity clearing models, in which macroeconomic aggregates adjust to the lowest attainable level. Often, as in this model, there is also price adjustment - but this operates with a lag and so is too sluggish to clear the market. There are five constraints in this model, as illustrated in Figure A.4.1. The overall level of output is given by the supply or demand constrained level. On the supply side three constraints may operate: savings, trade and fiscal. For each of these three supply constraints, the output of the non-copper sector (Y_O) is calculated, the exogenous output of the copper sector (Y_C) being added to non copper output to give potential output (Y^P). A binding trade gap can result in a level of output constrained either by shortage of capital or intermediate goods.

Figure A.4.1 Model structure

Output

In the first instance output may be either supply or demand constrained, so that output (Y) is given as:

$$Y_t = \min \{Y_t^s, Y_t^d\} \quad (\text{A.4.1})$$

where Y^s and Y^d are aggregate supply and demand respectively

If the economy is supply constrained then the constraint may come from one of the three gaps: forex, savings or fiscal (with corresponding levels of non-copper output of YO_t^f , YO_t^s , and YO_t^g). Hence:

$$YO_t^s = \min \{YO_t^f, YO_t^s, YO_t^g\} \quad (\text{A.4.2})$$

If the forex gap is the binding constraint then the level of output may be constrained by either the level of capital or intermediate imports. So that:

$$YO_t^f = \min \{YO_t^k, YO_t^i\} \quad (\text{A.4.3})$$

where YO^k and YO^i are the capital and intermediate import constrained level of output.

Recent three gap models (e.g. Solimano, 1991; and Taylor, 1994) have used capacity utilisation as an important variable (all variables in those models are normalised by potential output). In contrast to existing models in which under-utilisation may only result from a deficiency of demand, this model may produce capacity utilisation rates of less than one from either a demand constraint or from the unavailability of intermediate imports. Potential output (Y^p) is given by the minimum of the capital goods, savings and fiscal constraints levels of non-copper output plus copper output:

$$Y_t^p = \min \{YO_t^k, YO_t^s, YO_t^g\} + YC_t \quad (\text{A.4.4})$$

$$u_t = \frac{Y_t}{Y_t^p} \quad (\text{A.4.5})$$

Exports and the real exchange rate

Copper exports (XC) are exogenous and non-traditional exports (XO) given by the export supply function:

$$XO_t = \epsilon_0 + (1 + \epsilon_1)XO_{t-1} + \epsilon_2 RER_{t-1} \quad (\text{A.4.6})$$

where the parameter ϵ_1 represents autonomous growth in export performance or world demand,⁹ and RER is the real exchange rate. Total exports are thus:

$$X_t = XC_t + XO_t \quad (\text{A.4.7})$$

The real exchange rate is defined as:

$$RER_t = \frac{E_t P_t^*}{P_t} \quad (\text{A.4.8})$$

where E and P* are the nominal and exchange rate and foreign price level, both of which are exogenous. Both the real and nominal rate are defined so that a numerical increase is a depreciation. The domestic price level (P) is give by:¹⁰

$$P_t = P_{t-1} + \theta_1(Y_{t-1}^d - Y_{t-1}^s) + \theta_2 E_{t-1} \quad (\text{A.4.9})$$

The foreign exchange gap

The gaps are defined by accounting relationships: when a gap is binding the identity defines the constrained variable rather than a behavioural relationship. In the case of the foreign exchange gap the relevant identity is that the excess of foreign exchange requirements for imports (M) and debt service (DS) over export earnings must be met by a gross capital inflow (aid, A):¹¹

$$M_t + DS_t - X_t = A_t \quad (\text{A.4.10})$$

Aid and imports are both disaggregated:

$$A_t = A_{k,t} + A_{i,t} + A_{d,t} \quad (\text{A.4.11})$$

$$M_t = MC_t + MO_{k,t} + MO_{i,t} + MO_{c,t} \quad (\text{A.4.12})$$

where A_k , A_i and A_d are aid for projects (capital), import support (intermediate goods) and debt relief; and MC , MO_k and MO_i imports for the copper sector and capital and intermediate goods for non-copper production. It is a simplifying assumption that all project aid is for capital and all import support for intermediates - as shall be seen, it is the categories of affected imports which matters. Technical assistance is excluded from the model; as noted by Chenery and Strout (1966), such assistance may be important at some levels of development in relaxing the "capacity to invest", (or it may improve the efficiency of investment and hence lower the ICOR). When the foreign exchange constraint is binding there are no consumer imports (MO_c), these are determined as a residual under regimes when there is sufficient forex to purchase the required levels of capital and intermediate imports.

It is assumed that the first call upon available foreign exchange is for debt service and imports for the copper sector. Remaining foreign exchange is available for capital and intermediate imports, subject to the status for which aid funds are intended:

$$MO_{k,t} = \gamma_t(X_t + A_{d,t} - DS_t - MC_t) + A_{k,t} \quad (\text{A.4.13})$$

$$MO_{i,t} = (1 - \gamma_t)(X_t + A_{d,t} - DS_t - MC_t) + A_{i,t} \quad (\text{A.4.14})$$

where γ is a policy parameter. This parameter is not assumed to be constant in the simulations but varies according to a decision rule in accordance with the binding trade constraint.¹² This specification assumes that debt service is exogenous. More specifically, current inflows are assumed to carry insignificant repayment obligations and that the actual level of debt service is

unaffected by debt relief. Dropping this assumption, which is made for the purposes of simplicity, would mean that not all of debt relief would appear as additional resources.

The level of output attainable on account of capital goods imports is given by the Harrod-Domar equation:

$$YO_t^k = YO_{t-1}^p + \frac{1}{k} IO_{t-1}^k \quad (\text{A.4.15})$$

$$IO_t^k = cMO_{k,t} \quad (\text{A.4.16})$$

where k is the incremental capital-output ratio (ICOR) and IO investment in the non-copper sector. The trajectory of output depends upon the realised level of potential output in the previous period, which may not have been that given by the foreign exchange constraint in the previous period. Equation (A.4.17) is the rearranged demand function for capital imports, which determines investment under a foreign exchange constraint; the parameter c is expected to exceed unity (but not by much as most capital goods are imported).

If the binding constraint is a shortage of intermediate goods then attainable output is given by:

$$YO_t^i = dMO_{i,t} \quad (\text{A.4.17})$$

As for equation (A.4.17), equation (A.4.18) is a rearranged import demand equation. The parameter d is the inverse of the ratio of intermediate imports to non-copper value added, and so may typically take a value in the range 2.5 to 4.

The savings constraint

The savings constraint operates through the identity that:

$$IO_t^v = S_t + A_t - DS_t - IC_t \quad (\text{A.4.18})$$

where IC is investment in the copper sector, whose financing requirements are assumed to take precedence. Available public (S_p) and private (S_g) savings are given by the savings functions:

$$S_{g,t} = \alpha_0 + \alpha_1 YC_t + \alpha_2 YO_t + \alpha_3 A_t \quad (\text{A.4.19})$$

$$S_{p,t} = \beta_0 + \beta_1 YC_t + \beta_2 YO_t \quad (\text{A.4.20})$$

where, in accordance with Griffin's hypothesis and the results of the fiscal response literature $\alpha_3 < 0$. Savings constrained output is thus:

$$YO_t^v = YO_{t-1}^p + \frac{1}{k} IO_{t-1}^v \quad (\text{A.4.21})$$

The fiscal constraint

The investment savings gap may be broken down into its component parts:

$$(S_{p,t} - I_{p,t}) + (S_{g,t} - I_{g,t}) = S_t - I_t \quad (\text{A.4.22})$$

where I is aggregate investment and I_p and I_g private and public investment. Assuming that all debt is the responsibility of government, the government budget constraint may be written as:

$$I_{g,t} = A_t + PSBR_t + S_{g,t} - DS_t \quad (\text{A.4.23})$$

where PSBR is the public sector borrowing requirement. A government policy of fixing the PSBR will impose a limit on I_g through the availability of government savings which may be a tighter constraint of total investment than that given by the total availability of domestic investible resources.

Private and aggregate non-copper investment are given by:

$$I_{p,t} = \delta_0 + \delta_1 I_{g,t} + \delta_2 (A_{k,t} + A_{i,t}) \quad (\text{A.4.24})$$

$$IO_t = I_{p,t} + I_{g,t} - IC_t \quad (\text{A.4.25})$$

Output is determined by the Harrod-Domar equation:

$$YO_t^g = YO_{t-1}^p + \frac{1}{k} IO_{t-1}^g \quad (\text{A.4.26})$$

Demand constrained output

Aggregate demand is given by the national accounting identity:

$$Y_t^d = C_t + I_t + X_t - M_t \quad (\text{A.4.27})$$

Public and private savings (and therefore consumption) and investment and exports are given by the behavioural functions already given above (equations A.4.19, A.4.20, A.4.23 and A.4.24) and the import demand functions are those as implied earlier:

$$MO_{k,t} = \frac{1}{c} IO_t \quad (\text{A.4.28})$$

$$MO_{i,t} = \frac{1}{d} YO_t \quad (\text{A.4.29})$$

Consumer imports are given as a residual:

$$MO_{c,t} = X_t + A_t - DS_t - MO_{k,t} - MO_{i,t} - MC_t \quad (\text{A.4.30})$$

Hence a foreign exchange constraint is assumed to operate under the demand constrained regime. Relaxing this constraint would require endogenising a component of the capital account, which is not a realistic representation for a country such as Zambia. The existence of this constraint means that nothing would be added to the model by including the real exchange rate in the import demand functions. Also, an increase in exports does not increase demand for domestic output, since it is immediately offset by an increase in imports. (Aid inflows, on the other hand,

may either increase or decrease demand for domestic output depending on parameter values and the type of aid).

Model simulations

The properties of the model are explored by running simulations in which the amount of aid is varied. Figure A.4.2 presents the base run in which there are equal amounts of project aid, import support and debt relief. From period 0-4 the foreign exchange constraint is binding, and this is the intermediate goods constraint rather than the import of capital goods. Thereafter the savings gap is the binding constraint (with the forex constraint fluctuating around this line as the forex allocation rule switches from intermediate to capital goods). For comparison with later simulations, the demand constraint line is at 89.0, and income in period 12 is 60.9.

The first experiment, shown in Figure A.4.3, is to double capital aid. Since capital accumulation is increased by the availability of capital aid, and since the larger capital stock requires a higher level of intermediate imports, the foreign exchange gap is now binding up to period 8, after which the savings gap is again binding. The forex constraint is relaxed less slowly after period 4 as before that time the free forex allocation rule makes more available for intermediates (until $\gamma=0$ in period 4). The demand constraint line has shifted up to 91.5 (the reasons for which are discussed below) and period 12 income is 68.4.

Figure A.4.4 shows the effect of doubling aid to import support. As may be expected, the forex constraint is no longer binding. The demand constraint has dropped down to a level of 82.6 and period 12 income is 69.8. The higher income compared to the case in which capital aid is doubled is because in the above two simulations when the foreign exchange constraint limits output through lack of intermediate imports the lower savings which result from the lower income act as the constraint on investment (rather than the forex constraint) - hence the trajectory of potential output is lower than when the intermediate goods constraint is lifted.

Finally, the effects of doubling aid for debt relief are shown in Figure A.4.5. In this simulation the demand constraint moves to its lowest level of 77.8 and period 12 output is 67.2.

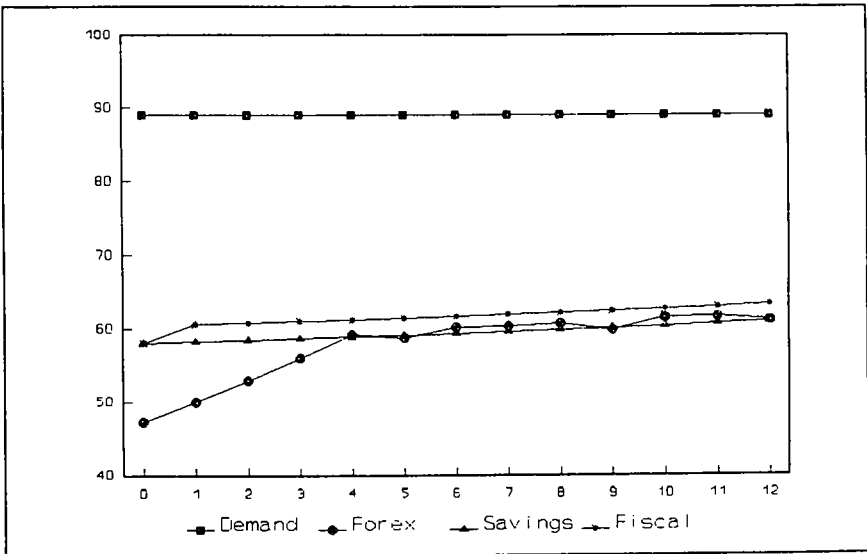
Figure A.4.2 Base run

Figure A.4.3
Doubling of capital aid

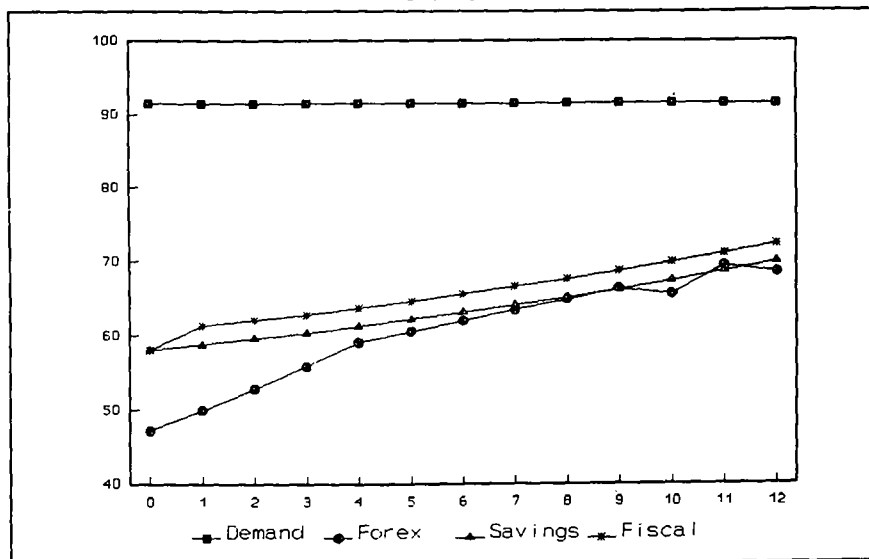


Figure A.4.4
Doubling of import support

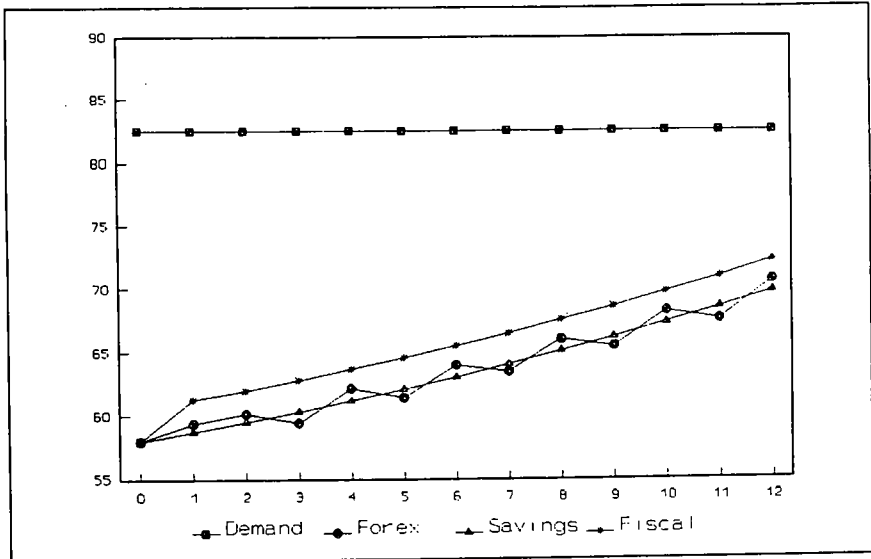
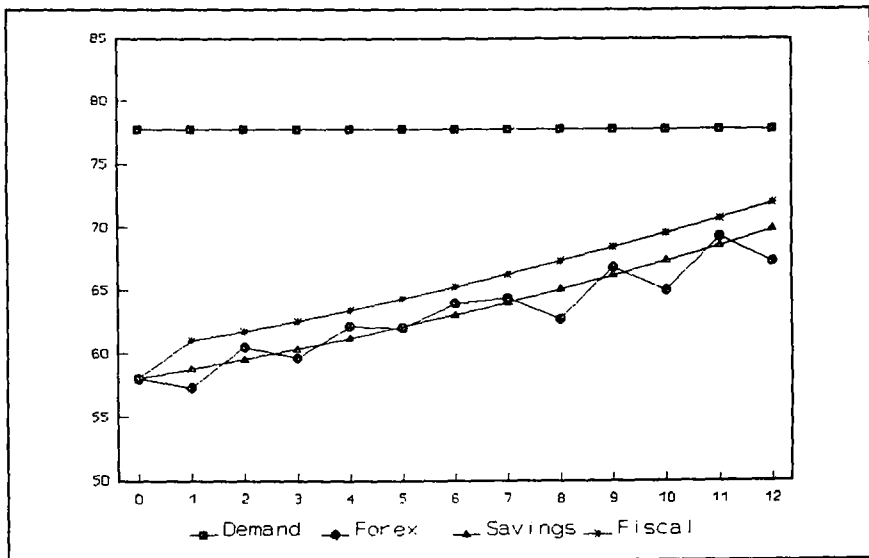


Figure A.4.5
Doubling of debt relief



The varying impact on demand from the different types of aid may be seen by substituting from equation (A.4.10) for the trade balance (X-M) into the national accounting identity for demand (equation A.4.27):

$$Y_t^d = C_t + I_t - A_t + DS_t \quad (\text{A.4.31})$$

Hence, as argued by Bhaduri and Skarstein (1993) an increase in aid will, *ceteris paribus*, lead to a reduction in demand for domestic output. However, *ceteris paribus* will almost certainly not hold true, though the extent to which aid affects domestic absorption (consumption plus investment) varies according to the type of aid. Differentials of the reduced form expression for Y^d for demand constrained output give:

$$\frac{dY^d}{dA_d} = -(1 + \alpha_3) \quad (4.32)$$

$$\frac{dY^d}{dA_i} = -(1 + \alpha_3) + \beta_2 \quad (4.33)$$

$$\frac{dY^d}{dA_k} = -(1 + \alpha_3) + \beta_2 + (1 + \beta_1)\epsilon_1 \quad (4.34)$$

In the case for aid for debt relief (equation A.4.32) the depressive direct effect observable in equation A.4.31 (which is the 1 appearing as the first term in the bracket) is partially offset by α_3 (which is negative, and so makes the whole affect less than unity): the displacement effect of aid on public savings corresponds to an increase in consumption. The adverse impact of import support aid (equation A.4.33) is further offset by β_2 , which measures the extent to which such aid crowds in private investment. Finally, capital aid (equation A.4.34) not only directly crowds in private investment but also public investment (yielding an additional indirect crowding in effect on private investment).

Bhaduri and Skarstein claim that the Y^d schedule is downward sloping in (A, Y^d) space - but they ignore the impact of aid on absorption and do not discuss the different types of aid. This model shows that aid for debt relief will unambiguously have the demand displacement effects they claim ($\alpha_3 > -1$), but that there is ambiguity in the cases of import support and capital aid. With the parameter values assumed here inflows of capital aid, but not import support, have a positive impact on demand for domestic output. These demand displacement effects have not been widely considered, but the analysis of this model suggests that it is perhaps not surprising that concern about them has arisen in the context of balance of payments support, as this type of aid makes foreign goods available with limited positive spill-over effects on domestic demand.

In all three simulations export performance is improved with aid increases compared to the base run. (In the base run period 12 exports are 17.9; they are 18.0, 18.3 and 18.5 with capital aid, import support and debt relief respectively). In each case the improvement comes from the real exchange rate depreciation brought about by a narrowing of the supply demand gap. This narrowing is achieved both by supply increases and (except for project aid) by demand reduction. Since debt relief has the largest impact on demand it has the most beneficial impact on exports.

This result is contrary to the notion of "aid as Dutch disease". The difference emerges since the Dutch disease argument rests on aid increasing the supply of tradables whereas demand increases for both tradables and non-tradables, resulting in excess supply of tradables and excess demand for non-tradables. The relative price of non-tradables therefore rises, i.e. the real exchange rate appreciates. This model does not contain the tradable - non-tradable distinction. However, the insight it gives, missing from existing analysis of aid as Dutch disease, is that the aid generated supply-side response can have an offsetting effect on the demand increase.¹³

Notes to Chapter 4

1. This argument is, of course, just a statement of fungibility.
2. So debtors may actually get back more in the end by debt reduction - this principle is captured in the "debt Laffer curve".
3. A controversial issue is whether relief on past non-developmental flows (military assistance and export credits) should be allowed to count as aid. The current compromise adopted by the DAC, which records aid data, is to include these items in the aid for individual donors but not in the overall DAC total.

For practitioners of aid-growth regressions the implication of "unintentional past aid" is that growth should be regressed on future aid.

4. By supporting surplus production the existence of food aid also supports misallocation of resources at the global level, but we do not pursue this point here.
5. In this case the aid is fully fungible, since the food aid releases an equivalent amount of foreign exchange, so that the food aid is the same as untied financial aid.
6. Maxwell (1986) points out that food aid studies may be divided into formal modelling favoured by academics and a less formal checklist approach used by donors. We focus here on formal studies, but the findings from less formal analysis are similar.
7. Chenery and Strout were not, however, the first economists to provide an intellectual basis for TA, which was given by Johnson's (1963) argument - captured in the expression a "generalized human capital approach" - about the productivity gains to be realised from institutional development.
8. There is usually a requirement for counterpart staff - so that aid staff may create a requirement for additional local staff. But in reality counterpart obligations are additional to existing workload or no counterpart is appointed.
9. If the former rationale is given, ϵ_1 could be endogenised through a relationship to public investment (I_p).
10. Foreign prices are not included in this equation, since they are an exogenous determinant of domestic prices whose impact which will not be examined in the model simulations.
11. It is common to have the net inflow on the right - so that amortization payments are moved from the left to the right hand side; official transfers are also often included in the current account (left hand side) rather than capital account. Here gross aid loans and grants are aggregated into a single aid figure and interest and amortization combined into a single debt service figure.

12. The policy parameter, γ , is given by:

$$\begin{aligned}\gamma_t &= \gamma_{t-1} + 0.05 \quad \text{if } u < 1 \\ &= \gamma_{t-1} - 0.05 \quad \text{if } u = 1\end{aligned}$$

subject to the condition that γ lies between 0 and 1.

13. The standard Dutch disease model (e.g. Corden, 1984) assume full employment, so the inflationary impact of a boom cannot be partially offset by supply increases, as in the model in this paper.

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PART II

COUNTRY CASE STUDIES

CHAPTER 5

THE MACROECONOMIC EFFECTS OF AID IN GUINEA-BISSAU

by Mario Zejan and Ari Kokko

5.1 Introduction

The Republic of Guinea-Bissau was established in 1974 after a long national liberation war against the Portuguese colonial administration. At this time, the country was severely underdeveloped, both because the war had destroyed much of the country's capital stock and infrastructure, and because the colonial era had failed to establish any firm foundations for indigenous economic development. The period under Portuguese rule had created a dual economic structure in Guinea-Bissau, with a distinct gap between a formal sector dominated by the colonial authorities, and a large informal sector comprising most of the indigenous population. The formal economy was organized around a bureaucratic public sector that controlled markets through various types of regulations and administratively fixed prices. Manufacturing was limited to a small and oligopolistic industrial sector, where the few inefficient firms survived only thanks to protection from foreign competition. Much of the demand from the expanding colonial authorities was satisfied by imports, and large trade deficits were built up and financed by capital inflows from Portugal. Concurrently, the informal sector was based on subsistence agriculture and barter trade, and the sector's activities were neither controlled, taxed, nor monitored by the government.

Guinea-Bissau's policies after Independence have focused on generating economic growth and diversification, and the ambitious development plans have been supported by grants, credits, and technical assistance from various multilateral and bilateral development organizations. However, the country remains one of the world's least developed economies, in spite of the

large amounts of aid that have flowed into the country during the last two decades. Subsistence agriculture still dominates the economy, employing some 80 to 90 per cent of the labor force, income per capita is estimated at US\$ 220, life expectancy at birth - 39 years - is the lowest in the world, more than two thirds of the population are illiterate, and the ratio of foreign debt to GDP is among the highest in the world.

This chapter examines the macroeconomic effects of foreign aid in Guinea-Bissau. The analysis focuses on the years between 1987 and 1992, which is the only period for which accurate and consistent data are available. The short time perspective limits the possibilities to reach very confident conclusions about aid effects in general, and lack of information on the structure and sectoral composition of aid limits the scope of the analysis. Yet, studying an extremely underdeveloped country like Guinea-Bissau may help distinguish some aspects of aid and development that are perhaps not clearly visible in other cases. In particular, it may be easier to recognize the relationship between aid, economic policies, and macroeconomic development when the starting point lacks most institutions characterizing a market economy.

5.2 Economic reforms since independence

The economic policies of the socialist government that was installed in Guinea-Bissau in 1974 aimed to diversify and develop the economy through import substitution of consumer goods and processing of primary products for export. However, the command economy adopted large parts of the already existing economic structure, and it soon became clear that central planning would not end the duality that had emerged during the colonial era. The state apparatus remained at the center of the stage controlling foreign and domestic trade, regulations and administratively fixed prices were maintained, official markets did not become more competitive, and the informal sector stayed outside of the control of official authorities. Trade deficits, fiscal deficits, and inflation continued to obstruct growth and development.

In the manufacturing sector, inflows of foreign credits and technical assistance made it possible to invest heavily in state-owned industrial projects, but these were often inappropriately large and unsuitable for Guinean conditions. The plants operated at very low levels of capacity

utilization and did not generate any profits: instead, they required heavy subsidies from government funds. Central planning also led to an expansion of the public sector. Public expenditure grew as a result of the ambitious investment plans, the financing of loss making state enterprises, and large expansions of the education and health sectors. At the same time, peasant production was discouraged by low output prices and the lack of incentive goods, and farmers responded by withdrawing from formal markets, diverting their surplus production to informal markets and to smuggling.

Fiscal revenues fell sharply as formal sector activities were substituted by thriving parallel markets, and the fiscal budget showed large deficits that were largely financed by credits from the Central Bank, fuelling inflation. The high inflation rates led to an increasingly overvalued Guinean Peso (PG), exports were discouraged, and the deficits in the balance of payments increased further. In short, the country was characterized by large macroeconomic imbalances. According to Galli and Jones the imbalances during the colonial period had

... set a precedent for Guinea's future leaders that proved difficult to resist, i.e. dependence on external borrowing in order to maintain a certain standard of living for the privileged stratum.

(Galli and Jones, 1987: 52)

Discussions about systemic reform commenced after political changes in 1980, when the ruling president Luiz Cabral was ousted in a military coup that brought the present leader, Joao Bernardo Vieira, to power. However, the first reforms did not materialize until 1983. The structural adjustment programmes that have been instituted in Guinea-Bissau after this time have differed significantly both from the colonial past and from the centralized system instituted immediately after Independence, and mark an abrupt change in the direction of the development strategy. The new policies emphasize the need to create institutions that promote markets rather than bureaucratic decisions, to establish prices that reflect supply and demand, to increase efficiency in production as well as public administration, and to establish some degree of macroeconomic stability. To a large extent, these reforms have been designed and financed by the international donor community. Yet, there have been significant differences in the scope and success of the different reform packages that have been implemented during the past decade.¹

The Economic Recovery Programme, 1983 - 1985

At the end of 1983, the Guinean government, supported by the IMF and the World Bank, launched a first comprehensive Economic Recovery Programme (ERP) to revitalize the economy. The primary objectives of the programme were to attend to the large imbalances in the economy, to restructure the inefficient public sector, and to stimulate production.

At the outset of the programme, the currency was devalued from PG 40 to PG 82 per US\$, and it was announced that the exchange rate would be subject to monthly adjustments thereafter.² Producer prices, consumer prices, and taxes were increased. During 1984, the recovery programme proceeded with austere financial and monetary policies, and recorded some success. However, in 1985 the strict economic policies were relaxed and the whole recovery programme collapsed. The main problem was that public expenditures were financed with credits from the National Bank, which caused inflation and counteracted the shift in relative prices that was intended to favor exports. Since the incentives for selling through the official channels were not sufficient, parallel markets and smuggling continued to undermine the official economy. Weak export performance and high import content in the large public investments made it difficult to improve the balance of payments.

Hence, high inflation, extensive parallel markets for goods and foreign exchange, smuggling, stagnating official trade, and large deficits in the government budget remained major problems even after the first reform effort: in some cases, the ERP had even worsened the situation. For instance, the stock of external debt had grown to US\$ 280 million and the government budget deficit reached a high of 48 per cent of GDP in 1985 (World Bank, 1987: 3-8). Severe shortages prevailed in rural markets. Although the government had raised the purchase prices for agricultural crops in 1986, a large part of the population suffered from a shortage of food staples. Forrest (1992) reports that in the non-rice-producing regions, such as Bafatá and Gabu, rice was considered virtually a luxury and food shortages caused malnutrition (Forrest, 1992: 109).

The first stage of the Structural Adjustment Programme, 1986

With the assistance of the IMF and the World Bank, the Guinean authorities introduced a new reform package entitled the Structural Adjustment Programme (SAP) in 1986. The programme set out to stabilize the economy by introducing prudent fiscal, monetary, and exchange rate policies, complemented by price and trade liberalization measures. Like the previous recovery programme, the SAP aimed to improve domestic relative prices of tradables through devaluations of the currency and price liberalizations, in order to stimulate domestic production. However, the need for fiscal and monetary discipline was stressed harder than before, in order to avoid inflationary pressures that could erode the impact of the devaluations on relative prices.

The authorities started to liberalize prices in August 1986. The programme also included sharp devaluations in order to reduce the overvaluation of the currency, and the Peso was devalued by 60 percent, from PG 263 per US\$ to PG 650 per US\$, in May 1987. A policy of weekly devaluations, a crawling peg, has been followed since then. The tight state control on internal and external trade was also abolished. The private sector was permitted to export both traditional and non-traditional products and quantitative import restrictions were removed for most products. In the domestic markets, private merchants were allowed to set up retail shops independently of the public distribution network (Aguilar and Zejan, 1991).

The economic results of the first phase of the SAP were better than those of the ERP, but still ambiguous. On the one hand, the government succeeded in deregulating the economy, abolishing public monopolies and liberalizing the price system. During the period 1987-1989 the growth rate of GDP was between 4 and 6 percent. Exports increased by 58 per cent between 1986 and 1987, and stabilized at a level of about US\$ 15 million. On the other hand, the programme was undermined by high inflation, because the authorities failed once more to stick to the strict fiscal and monetary policies that were called for in the programme.

The second phase of the SAP, 1989-1993

In 1989, the government launched a second phase of the SAP, again with support and financing from the World Bank. This time, however, it was agreed that the disbursements of

credit funds would be conditional on specific policy measures to be undertaken by the government. Among them were public sector reforms, privatization of public enterprises, fiscal and custom reforms, rationalization of the Public Investment Programme (PIP), reduction of the export tax on cashew nuts, and an active exchange rate policy aiming to keep the gap between the official and the parallel exchange rates below 20 percent.

The weakest part of the programme initially appeared to be monetary policy, since credit expansion was faster than aimed for. Consequently, inflation was high, at around 80 per cent in 1989, and between 35 and 70 per cent during the following three years. However, since 1992, the authorities have tried to control the increase in domestic credit, adjust interest rates, collect outstanding debts, make lending procedures more transparent and controllable, and put ceilings on the financing of the fiscal deficit by the Central Bank. The high domestic inflation forced the monetary authorities to make frequent adjustments of the nominal exchange rate, in order to avoid a deterioration of external competitiveness. The exchange rate policies have largely been successful and the disparity between the official and the parallel exchange rates has exceeded 20 per cent only occasionally since 1990. More recently, the gap has been reduced to less than 5 percent. The continuing deregulation of trade and prices has also been successful, and the only remaining export tax, on cashew nuts, has been reduced.

Some of the most important institutional changes carried out during the second phase of the SAP are in the banking sector. The old Banco Nacional da Guiné-Bissau (BNGB) was restructured and it abandoned commercial operations to form the Banco Central da Guiné-Bissau (BCGB), which has been in charge of monetary policy since March 1990. The first private bank, Banco Internacional da Guiné-Bissau (BIGB) also started operations in 1990. In 1993, the financial system comprised two private banks with several branch offices across the country. Yet, the financial system is still weak and has difficulties in meeting the requirements of the private sector.

Other public sector reforms have concentrated on the privatization of public enterprises and the establishment of control, information and management systems in several institutions, such as the Central Bank, the Ministry of Finance, the Planning Secretariat, and other ministries.

By 1992, six major public enterprises had been privatized and privatization of another three was discussed. Tariff reforms were carried out and the management and control functions of the custom administration were revised. Tax reforms have been discussed but not yet implemented on a large scale.

The reforms have also aimed to improve the efficiency of the Public Investment Programme (PIP). The PIP is the institutional framework for public investment, and it is reported separately in the government budget. It includes a large number of projects financed by donor funds and accounts for a major share of the total aid received by Guinea-Bissau. However, the PIP has until recently been a list of projects reflecting donor preferences rather than an expression of the conscious development objectives of the national government. This is because there has been a lack of local capacity to generate and evaluate projects and to define development priorities. The SAP aimed to reduce the size of the PIP and to increase the share of projects focusing on fixed capital formation, particularly in infrastructure. The reforms in this area have been partly successful: the number of projects has been reduced, but the domestic capability to assess and implement projects is still lagging behind.

Results of the structural reforms and the role of foreign aid

Looking at the Guinean experience of structural reforms and adjustment, it appears clear that exchange rate flexibility, trade and price liberalization, and reduction of export taxes have been the most successful areas. Loose fiscal discipline - or lack of macroeconomic stability - and the slow pace of institutional and administrative reforms appear to have been the main weaknesses, although significant improvements have taken place since the introduction of second phase of the SAP. It is also discouraging that the impact of the reforms on the structure of exports and imports has been small, and that Guinea-Bissau still shows a large structural current account deficit that is financed by inflows of grants and concessional capital. However, changing the structure of the economy means moving labor, land and capital from one use to another. Factor markets are not very flexible when infrastructure is inadequate, and technological capabilities, skilled labor, and domestic credit are in short supply. Both export diversification and domestic production of import substitutes will occur slowly because of these constraints, even if policies provide the correct price incentives.

At a general level, it is obvious that foreign aid has had a significant impact on the changes that have occurred in recent years. Bilateral and multilateral aid agencies have influenced development policies in two ways. Firstly, institutions such as the IMF and the World Bank have been responsible for the design of the reform programmes, and to some extent mandated the direction of policies. Secondly, financial and technical support from the donor community has made it possible to pursue these policies and reform programmes. The impact of foreign aid on more specific features of the Guinean economy is less obvious, and in the next section, we will take a closer look at the impact of aid inflows on some macroeconomic aggregates.

5.3 The macroeconomic effects of aid

The previous section described the macroeconomic reforms implemented in Guinea-Bissau during the past decade. In this section, we examine the macroeconomic effects of the inflows of foreign aid money to Guinea-Bissau within the "accounting framework" described in Chapter 2. After some brief comments about the availability of data to construct the accounting identities for Guinea-Bissau, we focus on the impact of aid on the variables in the country's external balance, i.e. the current and capital accounts. Thereafter, we examine the effects of aid on the internal balance, which is made up of the current account and the savings-investment gap.

Data sources and data availability

The empirical analysis that follows is based on information provided by the national authorities of Guinea-Bissau. The country does not publish official national accounts of the kind available in other countries, but publications by various government departments provide consistent data for most of the variables needed to construct our accounting identities from 1986.³ However, consistent data on the government budget are available only after 1987. We have translated all information to current US\$, using yearly average exchange rates, as published by the Central Bank of Guinea-Bissau. The reason is that it is impossible to construct an accurate data series in constant PG, because the one available price index covers only food, beverages and tobacco.⁴

Regarding information on aid inflows to Guinea-Bissau, there are several alternative data sources. Firstly, there are national data from the Guinean balance of payments (BoP), based on information collected by the Ministry of Foreign Affairs and International Cooperation. These are the data used in the subsequent analysis. There are also two sources of data based on donor reports: these are the publications of OECD's Development Assistance Committee (DAC) and World Debt Tables, from the World Bank. The figures reported in these three sources often differ significantly. Data from all three sources are only available for the period 1987-1990, as presented in Table 5.1. DAC and World Debt Tables report data also for earlier years, but consistent national BoP data are not available before 1987.

Comparing the information from the three sources, it should be noted that the Guinean BoP does not provide information about net disbursements of concessional loans. We have therefore calculated the net disbursements of concessional loans by complementing the BoP data with data on the repayments of principal from statistics on external debt provided by the Ministry of Finance. The net disbursements of concessional loans plus grants for the entire period, calculated this way, amount to US\$ 313.7 million. Hence, the net inflows of aid reported in BoP during the period 1987-1990 are about 27 per cent lower than those reported by the donors. A difference of 20 per cent still remains when technical assistance grants are deducted from both sources.⁵ We use the national sources in the ensuing analysis, primarily because they are consistent with other information in the national accounts.

External balance: the current account and the capital account

The accounting identity defining the external balance equates the current and capital accounts in the balance of payments. Data on the current and capital accounts of Guinea-Bissau, taken from the BoP published by the Central Bank, are presented in Table 5.2.

Aid consists of official transfers (OT), i.e. grants, and long-term concessional loans (LTLc). That is:

$$AID = OT + LTL^c \quad (5.1)$$

Table 5.1 Official development assistance to Guinea-Bissau, as reported by different sources, 1987-90
(in million US\$)

	DAC (1) Grants & Loans (Net)	WDT (Grants excl.TA)	WDT (TA)	WDT (Loans, net Disburs.)	WDT Total (Net)	BoP (Grants excl.TA)	BoP (TA)	BoP (Loans, Gross Disburs.)	BoP Total (Gross)	BoP Total (Net)
1987	111	42.4	27.3	39.1	108.8	34.4	11.3	33.1	78.7	75.0
1988	99	37.7	33.4	33.4	104.5	32.7	11.3	33.4	77.4	76.0
1989	102	51.0	25.2	35.6	111.8	46.9	11.3	37.0	95.2	90.4
1990	118	59.8	12.1	33.1	105.0	34.0	10.1	30.9	75.1	72.3
Total	430	190.9	98.0	141.2	430.1	147.9	44.0	134.4	326.4	313.7

Sources: OECD *Geographical Distribution of Financial Flows to Developing Countries* (1991)
World Debt Tables (1991)

BoP: Balance of Payments, Banco Central da Guiné-Bissau

Table 5.2 Balance of Payments 1986-1992 (in million US\$)

	1986	1987	1988	1989	1990	1991	1992
Trade Balance	-41.50	029.30	043.00	-54.70	-48.81	-47.03	-77.0
Exports fob	9.70	15.40	15.90	14.20	19.26	20.44	6.50
Imports fob	-51.20	-44.70	-58.90	-68.90	-68.07	-67.47	-83.50
Services excl. NFP	-24.40	-24.90	-27.00	-36.70	-24.81	-30.22	-30.34
Trade Balance (goods and services)	-65.90	-54.20	-70.00	-91.40	-73.62	77.25	-107.34
PCT: Private Transfers	-1.50	-2.00	1.50	1.20	1.00	-4.14	-0.64
NFP: Net Factor Payments	0.90	-2.30	-4.40	-6.60	12.22	3.55	0.25
Current Account excl. OT	-66.50	058.50	-72.90	-96.80	-60.40	-84.94	-107.77
OT: Official Transfers	43.50	45.60	44.00	58.20	44.16	39.96	35.69
Current Account incl. OT	-23.00	-12.90	-28.90	-38.60	-16.24	-44.97	-72.80
Capital Account:							
A. Official Medium & Long Term Disbursements	17.90	33.10	33.40	37.00	30.92	36.70	44.50
BoP Support	2.60	16.80	20.70	15.70	11.34	14.23	0.00
Projects	15.30	16.30	12.70	21.30	19.58	22.47	35.50
B. Scheduled Amortization	-8.10	-14.50	-15.20	-27.70	-18.36	-31.22	-33.29
C. Errors and Omissions & Short Term Capital	-3.70	-3.70	4.10	-9.70	-4.16	-13.36	33.91
Refinancing of Arrears:	4.10	-36.90	7.10	11.00	6.68	30.70	33.49
D. Increase	4.10	-36.90	7.10	11.00	9.22	37.10	40.02
E. Decrease					-2.55	-6.39	-6.53
F. Changes in Reserves	4.20	-11.00	-12.30	7.70	-14.67	9.57	-6.32
G. Debt Rescheduling	8.60	45.90	11.90	20.30	15.83	10.67	
Interests	8.60	15.90	11.90		6.12	2.31	
Capital		30.00		20.30	9.71	8.36	
Capital Account -(A+B+C+D+E+F+G)	23.00	12.90	29.00	38.60	16.23	43.07	72.29
Repayment of Principal:							
Current Amortizations		2.07	0.78	1.96	1.39	1.37	0.66
Payments of Arrears:		1.68	0.66	2.86	1.39	1.83	1.66

Source: Central Bank of Guinea-Bissau and unit of external debt at the Ministry of Finance.

Table 5.3 Exports 1987-1992 (in million US\$)

PRODUCTS	1987	1988	1989	1990	1991	1992
Cashew nuts	10.9	9.0	7.1	11.6	14.1	3.0
Forestry	1.2	1.5	1.0	2.5	1.4	1.3
Fishery	0.5	0.9	2.2	3.3	2.6	0.8
Other	2.8	4.5	3.9	1.9	2.4	1.3
TOTAL	15.4	15.9	14.2	19.3	20.4	6.5

Source: Central Bank of Guinea-Bissau

Table 5.4 Imports of Goods, 1987-1992 (in million US\$)

	1987	1988	1989	1990	1991	1992
Consumption Goods	10.0	13.6	27.6	25.7	27.6	35.5
Rice	5.5	8.2	10.2	9.5	14.1	18.9
Other	4.5	5.4	17.4	16.2	13.5	16.6
Fuel and Lubricants	4.7	3.8	7.5	7.2	8.8	5.9
Capital Goods	14.8	21.4	18.6	24.2	26.3	32.2
Construction	8.8	11.6	6.9	5.3	3.0	6.7
Materials	6.4	8.6	8.4	5.8	1.9	3.2
Other						
Total	44.7	58.9	68.9	68.1	67.5	83.5

Source: Central Bank of Guinea-Bissau

Table 5.5 Data on national accounts 1986-1992 (in million US\$)

	1986	1987	1988	1989	1990	1991	1992
GNP	230.32	162.95	150.55	191.66	145.62	230.14	220.91
NFI or NFP	0.90	-2.30	-4.40	-6.60	12.22	-3.55	0.25
GDP (M)	230.32	165.25	154.95	198.26	233.40	233.69	220.66
Exports of Goods and NF Services (X)	9.70	21.13	21.97	20.64	26.09	33.50	18.03
Imports of Goods and NF Services (M)	75.60	75.26	91.96	112.56	99.72	110.75	124.90
Resource Gap	-65.90	-54.14	-69.99	-91.92	-73.63	-77.25	-106.87
C	236.66	164.38	171.95	22.19	249.48	247.66	269.02
C _p	205.17	143.00	154.10	194.68	221.62	216.33	245.50
C _i	31.49	21.38	17.85	27.50	27.86	31.33	23.52
I	48.87	55.01	52.98	67.99	57.55	63.28	58.50
I _p	0.00	6.51	2.59	3.35	5.73	6.00	1.02
I _i	48.87	48.50	50.39	64.64	51.82	57.28	57.49
GDS (GDP-C)	-6.34	0.87	-17.00	-23.93	-16.08	-13.97	-48.37
GNS (NTR+GDS+NFP)	-6.94	-3.43	-19.90	-29.33	-2.86	-21.66	-48.76
S _p		5.75	-10.55	-10.23	5.29	3.93	-29.52
S _i		-9.18	-9.36	-19.10	-8.15	-25.59	-19.20
NTR	-1.51	-2.00	1.50	1.20	1.00	-4.14	-0.64
CA (X+NTR+NFP-M)	-66.50	-58.44	-72.89	-97.32	-60.41	-84.94	-107.26
OT	43.50	45.60	44.00	58.20	44.16	39.96	35.69
CA incl. OT	-23.00	-12.84	-28.89	-39.12	-16.25	-44.98	-71.57

Source: BCGB (1993).

Table 5.6 The Fiscal Budget 1987-1992 (in million US\$)

	1987	1988	1989	1990	1991	1992
A. Revenue	68.10	65.01	81.81	88.63	71.39	55.50
A.1 Tax Revenue	14.13	13.11	8.49	18.90	15.38	8.69
A.1.1 Income taxes	1.64	1.35	2.03	3.38	1.90	1.65
A.1.2 Property taxes	0.03	0.04	0.04	0.01	0.00	0.00
A.1.3 Consumption taxes	1.49	1.91	1.23	2.84	3.48	1.82
A.1.4 Int. Trade taxes	9.67	8.98	4.29	11.49	9.13	4.51
Import taxes	2.57	3.20	2.93	3.00	3.70	1.79
Export taxes	6.08	4.40	0.01	5.55	3.10	0.82
Custom duties	1.02	1.39	1.35	2.94	2.33	1.90
A.1.5 Other taxes	1.31	0.83	0.90	1.18	0.88	0.71
A.2 Non-tax Revenue	8.37	7.89	15.12	25.47	18.35	12.81
A.2.1 Fishing licenses	6.64	5.70	13.45	22.85	16.42	11.71
A.2.2 Other	1.73	2.20	1.67	2.63	1.93	1.10
A.3 Extraordinary	0.00	0.00	0.00	0.00	0.00	2.80
A.4 Grants	45.60	44.01	58.20	44.26	37.66	31.20
B. Expenditures	80.18	80.75	107.35	104.35	116.59	100.98
B.1 Current Expenditures	29.68	25.85	39.50	38.30	47.05	34.04
B.1.1 Salaries	9.65	7.56	9.85	9.92	12.00	8.67
B.1.2 Goods and Services	8.88	8.29	14.08	14.58	15.32	11.65
B.1.3 Transfers	2.85	2.01	3.58	3.36	4.02	3.20
B.1.4 Interest	8.30	8.00	12.00	10.44	15.72	10.52
B.2 Capital Expenditures (PIP)	48.50	50.39	64.64	51.82	557.28	57.49
B.3 Net Loans	2.00	4.50	3.21	14.22	12.26	9.45
Government surplus						
incl. Grants	-12.08	-15.74	-25.55	-15.71	-45.21	-45.48
excl. Grants	-57.68	-59.75	-83.74	-59.97	-82.87	-76.68
Primary saldo						
(A-A.4-B.1+B.1.4)	1.12	3.15	-3.89	16.51	2.4	0.78
Change in:						
external arrears (interest)	-14.60	7.10	11.00	1.84	8.98	7.56
internal arrears	0.00	0.00	0.00	0.00	0.00	3.69
Global adjusted deficit						
(after adjustments)	-23.82	-13.08	-15.09	-17.56	-30.58	-34.23
Financing	23.82	13.08	15.09	17.56	30.58	34.23
Domestic Borrowing	-18.38	-16.04	-14.50	-14.86	-7.30	4.22
Banks excl. Counterp.	-17.07	4.82	17.06	23.92	-0.58	6.11
Counterpart funds	0.00	-13.14	-26.09	-8.33	-6.72	-1.89
Non-bank	-1.31	-7.72	5.47	-30.44	0.00	0.00
Net Foreign Borrowing	42.20	29.12	29.60	32.42	37.88	30.01
Disbursements	33.10	33.41	37.00	30.12	36.70	32.41
Amortization	-14.50	-15.20	-27.70	-18.36	-31.22	-30.18
Change in arrears	-22.30	-0.98	0.00	4.83	21.73	27.78
Debt Rescheduling	45.90	11.90	20.30	15.83	10.67	0.00

Source: OGE (1993)

Table 5.7 Fiscal Indicators 1987-1992 (percent)

	1987	1988	1989	1990	1991	1992
Tax Revenue/GDP	8.6	8.5	4.3	8.1	6.6	3.9
Grants/GDP	27.6	28.4	29.4	19.0	17.1	16.2
Current revenue/Current Expenditure	75.8	81.2	59.8	115.9	71.7	63.2
Current Expenditure/GDP	18.0	16.7	19.9	18.2	20.1	15.4
Capital Expenditure/GDP	29.3	32.5	32.6	22.2	24.5	26.1
Primary Saldo/GDP	0.7	2.0	-2.0	7.1	1.0	0.4
Global Deficit/GDP:						
incl. Grants	-7.3	-10.2	-12.9	-6.7	-19.3	-20.6
excl. Grants	-34.9	-38.6	-42.2	-15.3	-35.5	-34.8

Source: OGE (1993).

It is not possible to construct a series on net disbursements of LTLc directly from the Guinean BoP, because the information on arrears does not distinguish between interests and principal. However, we have obtained information about amortizations from 1987 and onwards from the unit working on external debt at the Ministry of Finance of Guinea-Bissau. This information is not included in the balance of payments, but we have added it to Table 5.2, and used it to construct a series of "net" aid for the variable AID. Inserting this variable into the identity defining the external balance and rearranging the terms, it can be seen that:

$$AID = M - PCT - NFP - X - (EO + STL) - dR \quad (5.2)$$

where M is imports of goods and non-factor services, PCT is private current transfers, NFP is net factor payments from abroad, X is exports of goods and non-factor services, (EO+STL) is errors and omissions and net short-term capital inflows, and dR is the change in reserves (a positive dR is a reduction in reserves, i.e. an inflow of capital to the capital account). Below, we examine the relation between aid and each of the right-hand-side variables.

Aid and exports

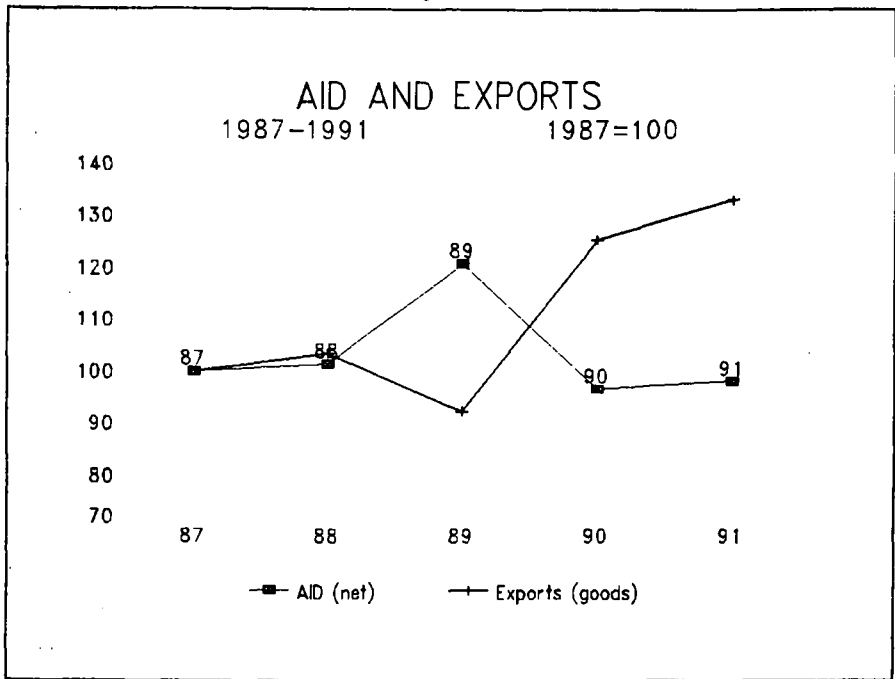
Table 5.3 summarizes the composition of Guinean exports during the period 1987-1992. The table shows that there was no clear trend in the development of exports during this period, and that the country is highly dependent on exports of cashew nuts, which account for more than 50 per cent of export revenues. Marketed production of cashew nuts increased sharply between the early 1980s and 1990; and exports grew from 2,300 tons in 1981 to 6,600 tons in 1985 and further to 16,409 tons in 1990.⁶ The reliance on one product and one market (the bulk of Guinean cashew nuts are sold to India) has led to a high degree of dependence on the evolution of one price that is determined by factors beyond the control of the country. The fall in the exports of cashew nuts in 1992 appears to be an anomaly: exports normally take place at the end of each year, but in 1992 they were delayed until the following year. It should be noted that the officially recorded statistics may not have captured all of the changes in exports during the last few years. For instance, there is anecdotal evidence suggesting that exports from the informal sector, e.g. fishing and forestry, have increased, and there are reports of significant unregistered reexports of rice (FAO, 1992).

The relation between aid and exports 1987-1991 is plotted in Figure 5.1. The series starts in 1987, the first year for which data on net aid are available, and ends in 1991. We have not included 1992, because of the delays in the exports of cashew nuts which led to atypically low exports that year. As Figure 5.1 shows, there is no clear trend for the whole period, although aid and exports developed in opposite directions between 1988 and 1990. However, it is difficult to draw any clear conclusions regarding the relation between the two variables from these few observations.

Exchange rate theory suggests that inflows of foreign resources may cause appreciations of the real exchange rate, RER (Edwards, 1989). The RER is a measure of the price incentives for the production of tradable goods. An appreciating RER lowers the relative price of tradables, which discourages production of exports and import substitutes, and encourages consumption of imports. Correspondingly, a depreciating RER makes exports relatively attractive and imports more expensive in local currency. One possible explanation for the negative relation between aid and exports 1988-1990 is related to changes in the RER. The increase in aid inflows to Guinea-Bissau between 1988 and 1989 may have caused an appreciation of the real exchange rate, which depressed exports, and the subsequent reduction in aid inflows may have contributed to a real depreciation that has stimulated exports. It is therefore useful to look more closely at the relation between aid inflows and the RER.

There are two main measures of real exchange rates in the literature. Recently, most studies have emphasized the comparison between local prices of non-tradables, primarily services and labor, and the local currency prices of exports and import substitutes (Edwards, 1988). It is impossible to construct an accurate RER measure of this type for Guinea-Bissau, because the country produces only one price index, based on a basket of food products, beverages and tobacco. An alternative measure of the RER is given by the purchasing power parity real exchange rate (ePPP). This compares the domestic and foreign prices of a representative basket of goods and services. The ePPP is defined as:

Figure 5.1



$$ePPP = \frac{EP^*}{P} \quad (5.3)$$

where E is the nominal exchange rate, P is the domestic price level and P^* is the foreign price level. Usually, $ePPP$ is approximated by comparing changes in consumer prices in the national economy and its main trade partners. According to this measure, adjustments of the nominal exchange rate are necessary to keep the real exchange constant if there is an inflation differential between the country and the rest of the world. For instance, if domestic inflation is ten per cent higher than foreign inflation, a ten per cent devaluation of the nominal rate is necessary to keep $ePPP$ constant.

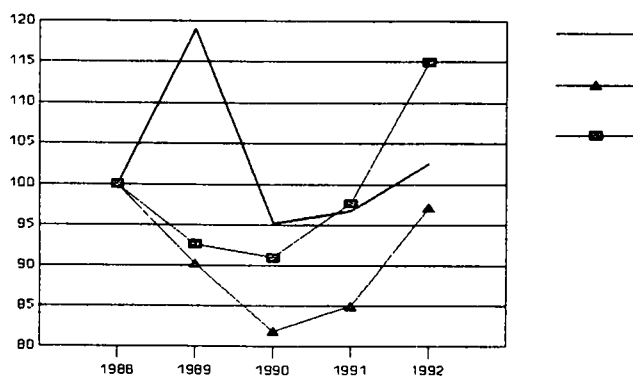
Figure 5.2 examines the relation between aid and two proxies for the $ePPP$. The first $ePPP$ proxy is the bilateral real exchange rate against the US dollar. The second is a trade weighted multilateral real exchange rate. The main problem in constructing the proxies is to define appropriate weights for the different currencies that appear in Guinean trade, since smuggling makes up a significant proportion of transactions. The two proxies presented in Figure 5.2 therefore provide two extreme alternatives: the share of US dollars is 100 per cent in the first case, but only 4 per cent in the second case.⁷ Figure 5.2 suggests that there was a tendency to an appreciation of the RER in 1989 and 1990, and a steady depreciation thereafter. Moreover, there are no clear signs of appreciations being caused by inflows of aid. Rather, the increases in aid after 1990 have apparently been accompanied by a notable depreciation of the real exchange rate.⁸

The ability to avoid appreciations of the RER during recent years may be related to the requirement that the parallel exchange market premium must be kept below 20 percent. Given the expansionary fiscal and monetary policies that have led to high rates of inflation, the monetary authorities have been forced to make frequent devaluations in order to avoid excessive real appreciations. The parallel market premium has been reduced from over 40 per cent in 1989 to around 5 per cent during 1992. Hence, there are no signs that aid inflows have caused any appreciation of RER that may have discouraged exports.

Figure 5.2

AID and Real Exchange Rate (ePPP)

1988 = 100



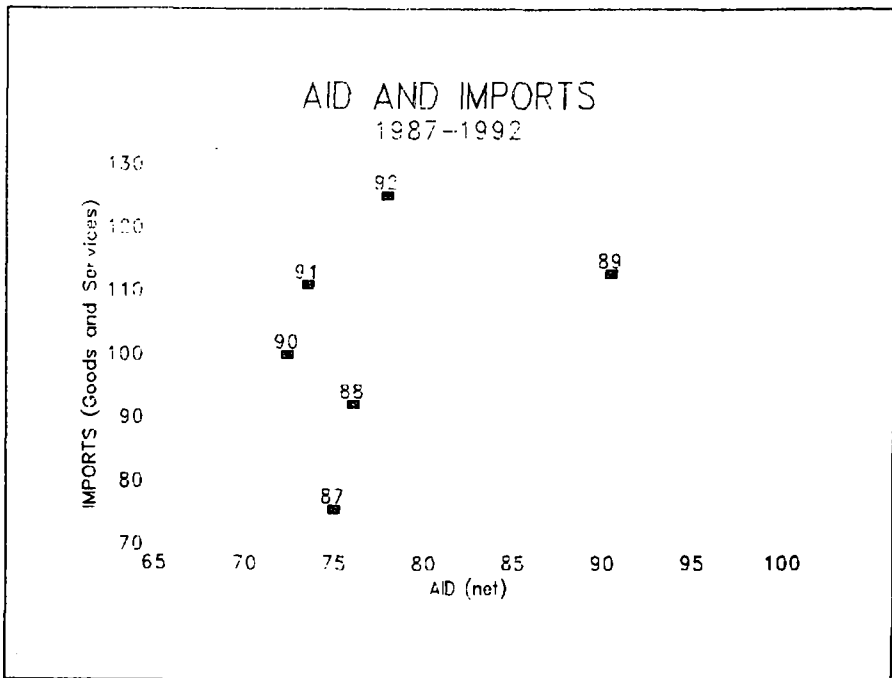
The finding that aid has not influenced exports significantly during the period 1987-1992 - neither directly through measures leading to a diversification and expansion of export production, nor indirectly through effects on the RER and relative prices - is hardly surprising. More significant changes in exports would require comprehensive changes in production structure, infrastructure, and human capital development. This type of changes can only come about in the longer run.

Aid and imports

The composition of imports during the period 1987-1992 is shown in Table 5.4. The aggregate value of imports has almost doubled since 1987, and imports of rice and other consumer goods has tripled. Rice, which is also produced domestically, makes up about 50 per cent of the imports of consumer goods. It is easy to see that the Structural Adjustment Programme has not reduced imports and that the structure of imports still has a strong bias towards consumption. (Moreover, passenger vehicles account for a large share of the imports of capital goods.) It is reasonable to expect an increase in the imports of consumer goods when an economy moves from a centrally planned system with a shortage of goods to a market-based system. Moreover, in the initial phase of the SAP, the promotion of production through an increase in the supply of imported incentive goods was an explicit aim. However, it is a matter of concern that this pattern is still present after several years of structural adjustment. The structure of imports, with a relatively low share of capital goods, also reflects the low levels of private investment in Guinea-Bissau.

Figure 5.3 plots the relation between aid and imports. Unusually large aid inflows took place in 1989, and that year seems to be an outlier. There appears to be a positive relationship between the two variables, but the simple correlation between them is far from perfect. Moreover, except for 1989, Figure 5.3 shows that imports have increased steadily and irrespective of what has happened with aid. It is impossible to disregard the fact that aid inflows determine the import capacity of the country and that aid financed projects account for a large share of the actual imports. However, there does not appear to be any exact relation between annual changes in aid inflows and imports.

Figure 5.3



The steady increase in imports during the period suggests that there have been other sources of financing than inflows of aid and officially registered exports (it should be noted that exports revenues have covered less than a third of the import bill). For instance, there was a surge in imports in 1992, although official exports fell markedly and the increase in the inflow of aid was modest. As noted in the discussion about exports, there are probably exports from the informal sector, and the unregistered reexports of rice have been estimated at 40,000 tons per year (FAO, 1992).

Aid and other components in the current and capital accounts

The net factor payments recorded in Guinea-Bissau consist of two items: scheduled interest payments and payments for fishing licenses by foreign fishing fleets. Receipts from sales of fishing licenses are not affected by aid flows. Moreover, it is not possible to analyze the country's actual interest payments in detail, because these are not reported in the BoP. The series on interests payments can not be constructed since the available data on arrears and rescheduling of interest payments do not appear to be reliable for all years.

Private current transfers (PCT) are a marginal item in Guinea-Bissau's BoP, and there is no apparent connection with aid inflows. Similarly, there is no apparent pattern between aid inflows and changes in reserves (dR). However, dR is a residual post that comes into play once other assets and liabilities have been accounted for. To discuss how accumulated reserves are used, we would need information about the Central Bank's foreign assets and liabilities, but this information is not available. Moreover, until 1992 the Central Bank contracted loans abroad on account of the Treasury. The operations of the Central Bank and the Treasury were not reported separately, which makes the picture very unclear.

Internal balance: the savings-investment gap and the current account

The accounting identity that illustrates the internal balance equates the savings-investment gap and the current account. This can be expressed as:

$$GNS_p - I_p + GNS_g - I_g = X + OT + PCT + NFP - M \quad (5.4)$$

where GNS is gross national savings, I is investment, subscripts p and g denote the private sector and the government sector, and the other variables are defined as earlier. As discussed in Chapter 2, the orthodox view is that an increase in foreign aid (in this presentation grants (OT), though the same argument applied to aid loans), should be fully reflected in the current account as an increase in imports, and in the internal balance as a one-to-one increase in investments.

Grants received from abroad are included in government savings and revenues on the left-hand side, and in OT on the right-hand side. Data on the national accounts are presented in Table 5.5, and they conform to the variables in equation (5.4). We will first examine the relation between aid and investment, and then continue to look more closely at the impact of aid on the government budget.

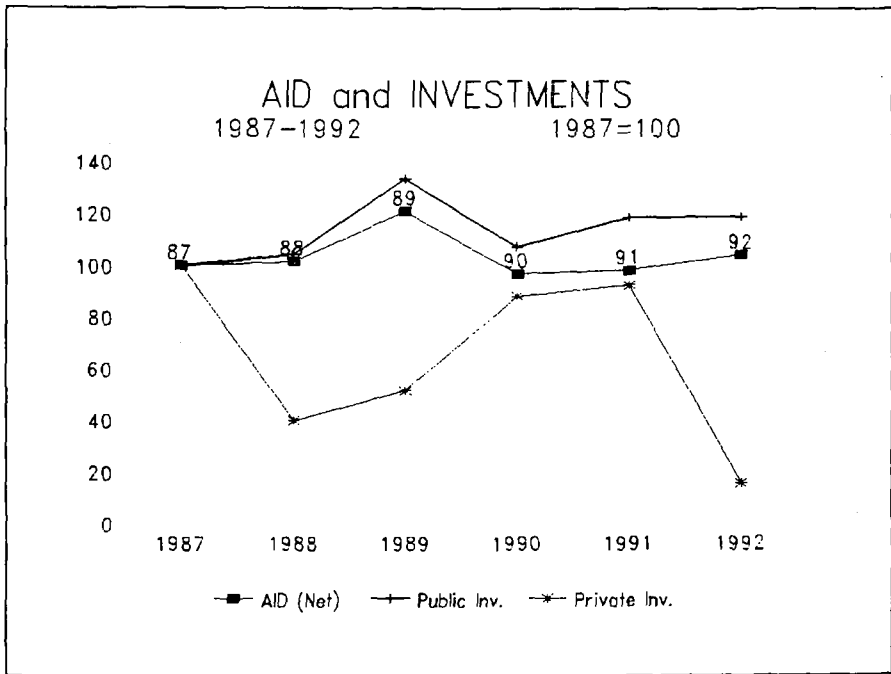
Aid and investment

Figure 5.4 plots the development of aid, public investments and private investments. There appears to be a positive relationship between aid and public investments, but not between aid and private investments.

Historically, aid-supported investment projects fall under the public sector and more than 95 per cent of the investments included in the public investment programme (PIP) are financed by grants and concessional loans. Even the domestic financing comes mainly from funds that have been generated through the inflow of aid (counterpart funds directed to the FND, Fondo Nacional de Desarrollo).

Although the structural adjustment programme initiated in 1986 emphasized the need to reduce the size of the PIP and to promote private investment, the data in Table 5.5 show no downward trends in public investments. The SAP also aimed to reorient the composition of the programme towards the provision of basic infrastructure supporting production and exports. However, the intended changes were difficult to realize. One problem was the lack of priorities

Figure 5.4



and coordination between projects. At the beginning of the 1990s, the PIP was still an incomplete list of ongoing projects about which the State Secretariat for Planning, responsible for its administration, lacked detailed information. Furthermore, a very large proportion of the expenditures included in the programme were recurrent costs and expenditures for technical assistance. In the last years, however, the government has managed to establish a more efficient administrative system, which has reduced the number of projects, and promoted investments in infrastructure. Particularly since 1992, there has been a noticeable improvement in the planning and implementation process. The share of machinery, equipment and construction in the PIP increased from 39 per cent in 1989 to 52 per cent in 1992, while the number of projects fell from 234 to 128. Projects in energy, transport, telecommunications, and other public works and regional development increased their share from 23 to 42 percent.

As mentioned before, aid inflows have been important determinants of the level of investment, with donors financing not only the foreign exchange costs but also local costs. In fact, this situation will probably persist for several years, because the government lacks the resources necessary to cover local costs. Requirements to increase Guinean financing of local costs would therefore have inflationary effects in the short run, since the funds would have to be borrowed from the Central Bank. Alternatively, the government could refuse project aid. However, this is not realistic, given that the Guinean authorities lack the capacity to assess projects, rank them according to priority, and select the projects to be refused. The implication is that the responsibility for a more restrictive investment policy lies in the hands of the donors.

There are also other reasons that favour a reduction in the size of the investment programme. High levels of investment have expansionary effects, leading to high levels of import demand, both because of the import content of investment projects and through the demand multiplier. The PIP still accounts for 26 per cent of GDP and the marginal investment funds would probably be more efficiently used elsewhere in the economy. For instance, investments in human capacity development would probably yield higher returns than those obtained in some of the ongoing investment projects.

Private sector investment has been limited for several reasons, such as lack of domestic managerial capacity, weak financial institutions, unstable macroeconomic environment, and so forth. According to a comprehensive World Bank study, private investment accelerated between 1983 and 1985, to reach 2.4 per cent of GDP in 1985 (World Bank, 1987: 37), but there is no clear trend suggesting further increases between 1987 and 1992. The apparent volatility of private investment is partly due to the fact that aggregate numbers are heavily influenced by a few large commitments.

Aid and the government budget

Because of its small and underdeveloped private sector, Guinea-Bissau's public sector dominates the economy. Table 5.6 summarizes the structure of the government's budget since 1987. Unfortunately, there is no information on the distribution of expenditures by sector or ministry, so it is not possible to make any detailed analyses of the social policies of the government.

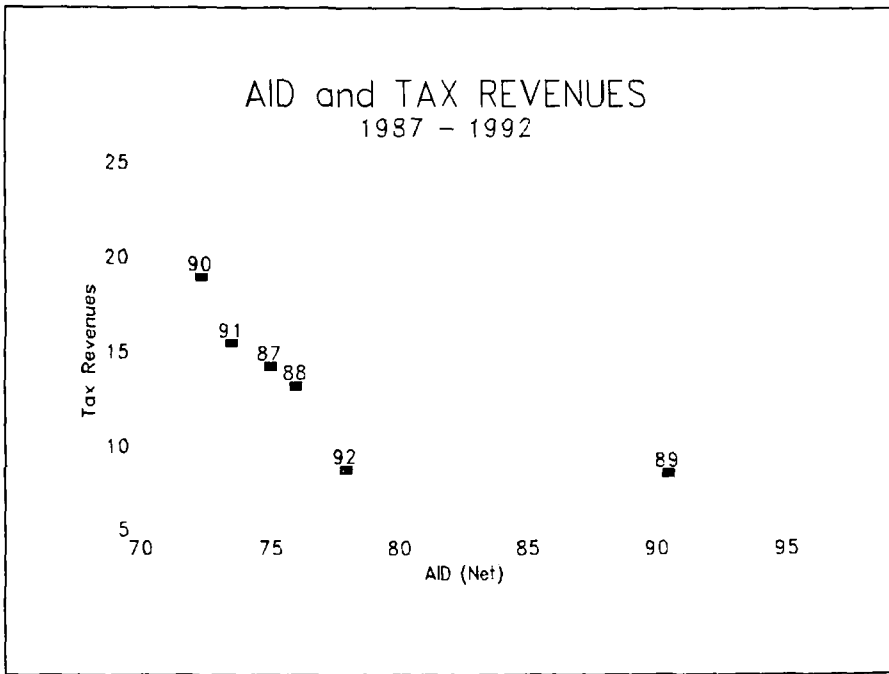
On the revenue side, it can be seen that a large increase in tax revenues in 1987 was followed by a decline to a very low level in 1989, a recovery in 1990, and a new decline during the following years. For the whole period, revenues have fluctuated in real terms.

Low income countries are usually heavily reliant on international trade taxes, while domestic income taxes tend to be of more limited importance. Guinea-Bissau is no exception and most tax revenues are from taxes on international trade. The effective tax burden on imports can be calculated using budget data. They indicate that the average effective import tax is about 5 percent, i.e. lower than the average import tariff (that was 24.3 per cent in 1990, according to World Bank, 1992), which suggests the existence of widespread tariff exemptions. The average effective tax on exports fell from almost 40 per cent in 1987 to about 15 per cent in 1992. Export taxes on cashew nuts are still an important source of tax revenues. Although the country's trade deficit would seem to require even stronger export promotion, the role of export taxes for fiscal revenues makes further reductions unlikely in the short run.

Consumption taxes, which include a tax on gasoline, account for a small share of tax revenues. There is a potential for increasing them, as the efforts in 1990 and 1991 show, but policies were not sustained in 1992. Non-tax revenues are mainly made up of fishing licenses, which have become a major source of foreign exchange earnings. The revenues from fishing licenses were unusually high in 1990, due to renegotiations and payments of licenses for earlier years. It is clear, however, that the license receipts have doubled since 1987, which may reflect an improvement in the negotiating skills of the government. The extraordinary revenues are from the privatization of public enterprises. Grant aid is accounted for on the revenue side of the budget with amounts corresponding to those reported in the BoP.

The most important policy reforms related to the revenue side of the budget are a simplification and a rationalization of the tax structure and a broadening of the tax base. The fact that transactions in small and medium firms are not recorded, and that the educational system does not provide the necessary skills to maintain formal books and records, limit the possibilities to extend the tax base in the short run. Thus, the largest potential for an increased base is the elimination of various exemptions from existing tax legislation. Several initiatives have been taken to improve the administration and collection of taxes and to rationalize the tariff structure and improve custom procedures. There are, however, several measures that have not been undertaken yet, such as the introduction of a broad based consumption tax and land taxation.

An analysis of the relationship between aid inflows and the elements on the revenue side of the budget suggests that there is no strong relationship between aid inflows and total revenues. This result seems reasonable, since receipts from fishing licenses make up a major component of fiscal revenues, but are not directly related to aid policies. However, there seems to be a clear negative relationship between aid inflows and tax revenues, as illustrated in Figure 5.5. The figure indicates that tax revenues tend to fall when there are increases in aid inflows. Moreover, the relationship holds for both major components in tax revenues: consumption taxes and taxes on international trade. In other words, it seems that aid has been fungible, in the sense that increases in aid inflows during the period 1987 to 1992 have allowed the government to reduce domestic taxation.

Figure 5.5

There does not seem to be any clear relation between aid inflows and current expenditures. Real current expenditures were stable in 1987 and 1988, increased markedly in 1989 and have fluctuated since then. Salaries account for about a quarter of current expenditures, and the government has implemented retirement plans and other measures to reduce public sector staffing, in accordance with the objectives of the SAP.

The capital expenditures included in the government budget are largely made up of the PIP, and are still high, especially with respect to the World Bank recommendations that investment volumes should be reduced. The expenditure side is complemented with the item Net Loans. This is an adjustment item that collects information on delays in the payments of counterpart funds generated by some types of grants. There was an increase in delays in 1990, but the government has increased its efforts to recover the loans since 1992. The IMF reports that most of the debtors are now identified (IMF, 1992: 17).

Table 5.7 presents some measures to illustrate the character of fiscal policy in Guinea-Bissau. The government has been running a large budget deficit in recent years. The primary budget saldo, defined as revenues (excluding grants) minus current expenditures (excluding interest payments), is often used as an indicator of how expansionary or contractionary the government's economic policies are. In Guinea-Bissau, the primary balance has been positive (but far too small to cover interest payments on the external debt) and it is therefore hard to characterize the government's fiscal policies (excluding the PIP) as overly expansionary.

Part of the budget deficit is financed by inflows of grants, but the country has substantial financing needs even when these inflows are accounted for. Moreover, the reduction in the inflow of grants in recent years has led to an increase in the global deficits. These deficits are financed by net inflows of capital in the form of loans, and by debt management through debt rescheduling and accumulation of arrears.

In summary, it is hard to see the kind of improvements in the fiscal budget that have been aimed for in the ongoing adjustment process. Tariff reforms, privatization and stricter

management of counterpart funds have been implemented, but they have not left any significant marks on the budget deficits. In this context, it may be important to note that major elements in the fiscal budget, such as grants and net foreign borrowing, are factors outside the control of the Guinean authorities. Thus, the possibility to control the budget deficit by influencing domestic variables is limited. For instance, a doubling of tax revenues would not reduce the global deficit by more than 25 percent.

5.4 Conclusions and Recommendations for Swedish aid

Summary of findings

As a summary assessment of the adjustment programmes that have taken place since the mid-1980s, it seems fair to claim that Guinea-Bissau has succeeded in liberalizing the economy - that is, the reforms have managed to remove some institutions that obstructed development - but that the authorities have not been equally successful in creating a stable macroeconomic environment or establishing new institutions in all areas where such are needed.

The international development agencies, mainly the World Bank, have played an active role in the reform process, by contributing to the design of the adjustment programmes and by providing financing and technical assistance for the implementation of the programmes. Both these elements have been necessary components of the reforms. External financing has been a precondition for the type of reforms that have been launched, since it allows adjustment with somewhat higher levels of consumption and investment than would otherwise be possible, and makes difficult measures more acceptable. For instance, liberalization requires inflows of foreign aid in order to finance necessary increases in imports of investment goods and incentive goods.

Regarding the direct effects of aid inflows on the macroeconomic aggregates appearing in the external balance, it is very difficult to see any distinct pattern, except for the generally high level of imports. (In fact, not even imports seem to be very sensitive to short-run fluctuations in aid inflows.) This may partly be explained by data limitations: detailed data series can only be constructed for the most recent years, and neither the number of observations nor the variability in aid flows are large enough to generate many statistically significant correlations.

However, looking at the impact of aid on the internal balance, it is possible to make some slightly more confident conclusions. As we have noted several times, there is a fundamental connection between aid and public investment, since public investment is largely financed by aid monies. Our data reveal that there is also a short term correspondence between the two: the volume of public investment fluctuates closely with aid inflows. Yet, the most significant result from the empirical analysis was a negative relationship between aid inflows and the government's tax revenues, which suggest that there has been aid fungibility. In other words, inflows of aid funds to the government has allowed it to lower the domestic tax burden, which suggests that aid has substituted for domestic mobilization of resources. This is a sign of weak fiscal discipline and supports the findings regarding the performance of the adjustment programme at large: the main weaknesses appear to be a lack of fiscal and monetary discipline.

Another aspect of the impact of aid is related to aid dependence. According to Doriye *et al.* (1993: 50-51), "sustainable growth without long-term aid dependence requires that the average savings ratio rises over time so as to close the savings gap" and that "export growth should exceed import growth in a longer run perspective". Regarding the latter definition, it is difficult to say anything about how aid inflows influence Guinea-Bissau's aid dependence: short-term fluctuations in aid have not been closely related to changes in imports and exports. However, looking at the former definition, it appears that aid has actually worsened aid dependence. Lacking data on the informal sector, we must interpret the savings-investment gap in terms of government revenues and expenditures, where public investments are included. Our results suggest that there is a negative relation between aid inflows and government tax revenues. Since there also appears to be a positive relation between aid and government expenditure in the form of public investment, this indicates that aid inflows actually widen the savings-investment gap, and aggravate aid dependence.

Recommendations

Structural reforms in Guinea-Bissau have progressed far when it comes to liberalization, but not when it comes to stabilization and institutional development. Furthermore, the stock of

foreign debt makes up a serious constraint for economic development: some share of already scarce resources must be channelled for debt servicing. One main recommendation is that the allocation of aid resources should focus more closely on stabilization and institutional development. In addition, efforts to alleviate the overhanging debt burden should be considered. The recommendations that follow are based on a macroeconomic perspective, which means that they may have to be complemented by measures focusing more directly on specific target groups.

From the point of view of economic stabilization, it appears that the present structure and level of imports in Guinea-Bissau are inappropriate. Firstly, imports contain too many consumer goods. The reason is that the incentives for long-term productive investments in Guinea-Bissau have been weak, and imports and wholesale and retail trade have provided faster and less risky profits than production of goods. The Central Bank's slack credit policies have made financing of imports easy, but the resulting credit expansion has contributed to the high level of inflation. Secondly, the total investment volume reflects too high levels of investments with respect to the country's management capability. Consequently, many investments have not been profitable enough to cover interest payments and amortizations, which have instead burdened the government budget, and worsened the budget deficit. Hence, badly managed and inefficient investment projects do not support economic stability, which suggests that the investment amounts should be reduced to a more manageable level.

Aid resources should also be allocated in a manner that supports stabilization. At a general level, this means that the donor's commitment should be of a long-term nature, and that volatility in aid disbursements should be avoided. More specifically, it appears that macroeconomic stability in Guinea-Bissau would benefit from lower levels of aid. A reduction of the imports of consumer goods would improve the conditions for local producers; a reduction of imports of capital goods would improve the efficiency of the public investment programme. It is also likely that aid donors could support stability by making aid disbursements conditional on attainment of specific macroeconomic targets. Most importantly, it appears necessary to reduce credit expansion and inflation. Given the nature of the Guinean economy, it appears

obvious that inflation cannot be eliminated altogether, but a target for price stability is called for. Moreover, specific targets regarding government revenues may be necessary to avoid the fungibility of aid funds that appears to be present.

Regarding institutional development, it is apparent that the most acute constraint to development is the lack of technical skills and management capabilities in both the public sector and in the emerging private sector. Hence, aid should focus heavily on education and training of local personnel. Improvements in the management capabilities of the ministries and public institutions related to social sectors, e.g. education and health, are at the top of the list, since their operations are essential for the future success of efforts to improve the country's human capital resources. In fact, it appears that the insufficient managerial capabilities in the areas of health and education have been the major constraints to achieve sustainable improvements in the standard of living of the population. The weak results obtained so far cannot be attributed to lack of foreign resources, but to the low efficiency with which they are used. Moreover, improvements in the health and educational status of the poor are necessary to enhance their possibilities to benefit from economic growth (Doriye *et al.*, 1993).

To support the emerging private sector and the development of markets, it is also necessary to invest in market infrastructure, and establish well defined property rights and an efficient legal system. Foreign support is also needed for the establishment of appropriate credit institutions, such as rural credit markets and credit facilities for small and medium sized firms.

Meanwhile, it is necessary to combine long-term programmes focusing on these institutions with short-term training programmes targeting key groups of technocrats elsewhere in the economy. In the private sector, there is need for simple vocational training in mechanics and electronics, and basic skills required in a market economy, such as accounting and book-keeping. In the public sector, the focus should be on support to key institutions in the reform process: the Central Bank, the ministries of commerce and trade, and the ministry of finance and its planning secretariat. Continued support to data collection and production of statistics would also enhance the capabilities to formulate and evaluate ongoing and future

economic reforms. In particular, there is presently a lack of information on issues like poverty, income distribution, consumption patterns, and other household data.

Some of the short-run requirements, especially in the public sector, could perhaps be satisfied by financing expatriate experts to be stationed at the relevant ministries, which has been the traditional approach. However, we would like to promote other alternatives. The transfer of skills to locals must be the central objective, and it is likely that this is achieved more efficiently (and probably also at a lower cost) if local personnel are given intensive training courses in Guinea-Bissau or elsewhere.

Notes to Chapter 5

1. For a more comprehensive discussion about the background and the Guinean structural reforms, see Zejan *et al.* (1994).
2. Information about exchange rate and trade regulations are from various issues of IMF's annual reports on *Exchange Arrangements and Exchange Restrictions* (IMF, various years).
3. These data are scrutinized by the World Bank and the IMF and they are supposedly the primary source of information for the various reports published by these organizations.
4. There are some alternative data sources, but they all suffer from more or less serious weaknesses. For instance, it is possible to construct some of the accounting identities using data from the World Tables published by the World Bank. These data are only available at high levels of aggregation and they often differ from those given by national sources (that have supposedly been scrutinized by the World Bank itself!). Similarly, there is statistical information in various reports by national and international organizations, but these sources are incomplete because they cover only few variables and limited time periods, and because they are not consistent with the national accounts when comparisons are possible. Moreover, several of the reports do not report the origins of their information or how their statistics have been calculated.
5. The United Nations Development Programme (UNDP) conducted a survey among donors in order to estimate the actual aid disbursements in 1990. According to their results, total aid flows to Guinea-Bissau amounted to US\$ 97 million. Thus, the survey suggest that donor information overestimates aid by between 8 and 43 percent, while the national sources underestimate actual inflows by some 20 per cent.
6. IRDC (1987: 35) for 1981 and 1985 data; BCGB (1992: Table 7) for 1990 data.
7. The multilateral exchange rate is constructed on the basis of a trade basket for 1992, including countries with at least 5 per cent of Guinean exports or imports. The countries (with their percentage shares in parentheses) are Germany (7.41), Holland (17.3), Portugal (48.4), Senegal (9.40), China (11.9), Gambia (1.7), and USA (3.88). Data on nominal exchange rates and changes in national consumer price indices are from IMF (1994).
8. We also constructed a rough RER proxy based on a comparison of the price indices for exports and imports, calculated from the national accounts, and the consumer price index in Bissau. The results were very similar to those for ePPP.

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CHAPTER 6

THE MACROECONOMIC IMPACT OF AID IN NICARAGUA

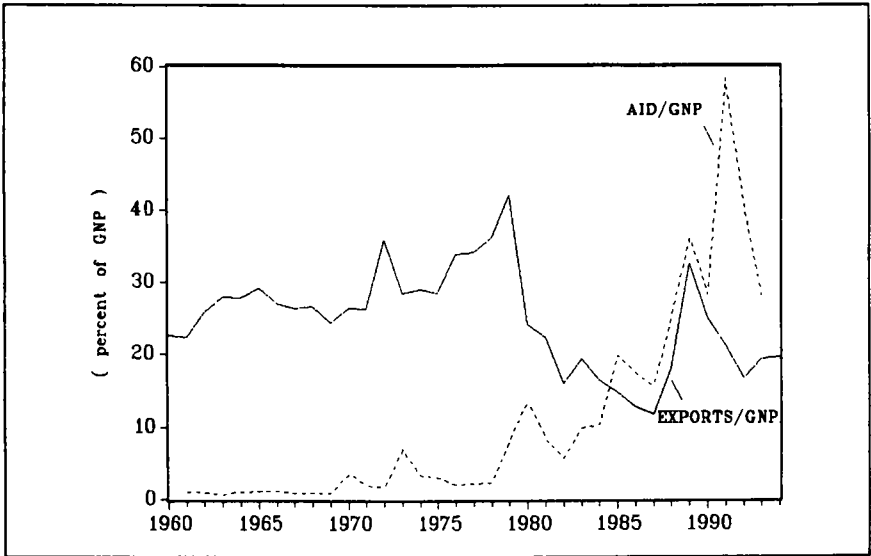
by Rob Vos with Sara Johansson

6.1 The macroeconomic importance of aid to Nicaragua

Foreign assistance to Nicaragua underwent major changes during the last two decades. *Firstly*, the level of aid inflows increased substantially during the 1980s and 1990s (see Figure 6.1). In 1993, aid inflows reached almost 50 per cent of GDP and were more than twice the size of exports. *Secondly*, the origin of aid flows shifted from the former socialist countries (plus some European assistance from Sweden, Spain and the Netherlands in particular) in the 1980s to a broader based Western-based (US, Europe, multilateral) support in the 1990s. *Thirdly*, there have been substantial variations in the forms of aid and the conditionality attached to it. In the 1970s, aid was mainly directed to specific projects, while in the 1980s, and to an even greater extent in the 1990s, it came mainly in the form of commodity and balance of payments support. While in the 1980s the socialist country assistance to Nicaragua came mainly in the form of non-liquid commodity support, i.e. providing little spendable foreign exchange, while the balance of payments support from the U.S. and Western Europe provided mainly liquid finance in the 1990s. However, the new assistance was strongly conditional upon far-reaching policy reforms.

Since 1980, aid inflows have come to play a critical role in the development of the Nicaraguan economy. Over the past decade and a half foreign assistance to Nicaragua has been consistently much larger than export earnings. Yet, growth performance has been extremely dismal. Since 1991, most aid and other capital inflows have been strongly conditional upon stabilization and structural adjustment programmes. Undoubtedly, aid has played a crucial role in stabilizing the economy, but it has not provided the shot in the arm the economy needed to

Figure 6.1
Aid and Exports as % of GDP, 1970-93



Note: Aid excludes debt cancellation.

recover from a prolonged period of crisis. A reduction of aid flows would certainly endanger economic stability in the short run, but at the same time there is the risk aid will increasingly function as a drug leading to the addiction of aid dependency. Macroeconomic conditionality attached to aid will remain important, but central attention should shift to the major supply-side problems of Nicaraguan economy, including inadequate physical and social infrastructure, malfunctioning distribution networks, uncertainty about property rights and the shortcomings in the credit allocation system.

The remainder of this chapter is organized as follows. Section 6.2 gives a brief background to economic developments and policy-making in Nicaragua over the past decades. Section 6.3 describes the major shifts in the nature of aid flows. Section 6.4 discusses the link between aid and the country's enormous external debt burden. These sections serve as the background to the core analysis on the macroeconomics of aid discussed in Section 6.5, where it is shown that it is difficult to infer long-run trends in the impact of aid as there are marked differences from period to period. These differences are closely related to the dramatic changes in political regime and which have altered source and nature of aid flows, as well as the macroeconomic context in which they were to play a role. Some policy conclusions are drawn in Section 6.6.

6.2 Economic Development in Perspective

Before the Sandinista revolution of 1979, official development assistance was of minor importance, amounting to less than 3 per cent of GNP. During the 1960s and 1970s, Nicaragua's agro-export based economy outpaced the growth rhythm of its neighbouring Central American countries and grew at an average rate of 6 per cent per annum. The government provided basic support to the export sector (with cotton being the initial basis of the boom) in the form of infrastructure, credits and input subsidies. Buoyant export earnings required only modest inflows of foreign savings to meet import needs. This 'golden age' of economic growth was, however, set in a context of a dictatorial political regime, a heavy concentration of economic wealth (most in the hands of the ruling Somoza family) and a sustained backwardness of education and health care. In the mid 1970s, 43 per cent of the population over 15 was

illiterate, infant mortality well over 100 per thousands births and nearly half of the population (mostly rural) lacked access to safe drinking water. At the time, Nicaragua's social indicators matched those of a typical low-income country, although by its income per capita it had entered the league of middle-income countries.

The Sandinista revolution put a dramatic end to the unequal distribution of wealth and opportunities, but also, as it turned out, to economic prosperity. The reconstruction of the economy, the reparation of the infrastructural damages of the civil strife, and the spur in public social spending to improve the country's poor social record required significant foreign assistance. Foreign credits and grants amounted to some US\$ 600 to 700 million, double the level of export earnings. High aid inflows did not foster economic growth, however; a result strongly driven by political factors. The country was hit by a US trade embargo and a US veto on multilateral loans, requiring an inefficient substitution for trade with and aid from the former socialist countries, and a US-supported *contra* rebel insurrection drove the country into another civil war causing severe damages of productive capacity and military expenditures eroding the country's fiscal resources. The socialist country support provided no liquid foreign financing, such that the Sandinista government felt itself forced to resort to the money printing press to finance the costs of the war. The subsequent hyperinflation completely devastated the shaken economy.

The country became increasingly aid dependent during the 1980s, but without boosting economic growth. GDP per capita increased slightly in 1980-81, but has fallen steadily since 1982 (except 1983). The external shocks and political factors contributed to this trend. In particular, the *contra* war and the US campaign against the country strongly affected production and economic policy decisions. Firstly, the civil war involved serious damage to production, but also created labour supply problems, in the form of a flight of skilled labour to abroad, diversion of young workers into the Sandinista army and rural-urban migration leading to scarcity of labour in several crucial sectors (particularly, coffee production) (Gibson, 1987; and FitzGerald 1987 and 1989). Secondly, the US trade embargo and its veto on multilateral lending, forced the government to an "inefficient substitution of trading partners and aid donors"

(Taylor *et al.*, 1989; and Ocampo, 1991), which helped to reduce some supply shortages (e.g. oil), but created others (repairs for equipment). Thirdly, the promise of the revolution led to an expansion of public investment in infrastructure and production and to rising social expenditures, particularly during 1980-84. However, the supply constraints and rising defense expenditures in response to the *contra* war, generated an unsustainable excess demand situation. The government sought financing by defaulting on its foreign debt obligations, but this proved insufficient. The monetary financing of the deficit pushed up domestic prices to hyperinflation levels, reaching a record height - even by Latin American standards - of 43,029 per cent on an annual basis in January 1989. Attempts at stabilizing the economy, including orthodox adjustment programmes in 1988 and 1989 could not stop the inflationary spiral, while at the same time causing a deep recession and a collapse in public sector employment (Ocampo 1991, Corbo *et al.*, 1993; and Vos, 1994).

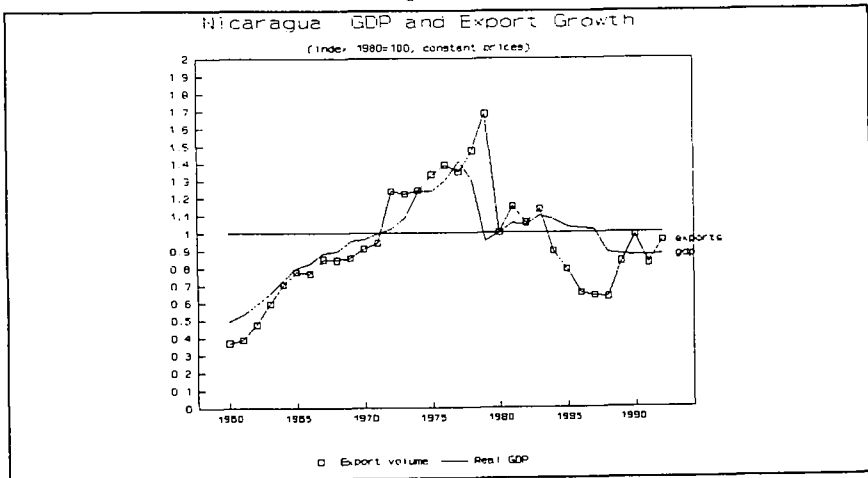
The new Chamorro government, elected to power in 1990, set in motion another full-scale structural transformation of the economy, aiming at the restoration of "market efficiency", involving full elimination of price controls, trade liberalization, financial sector reform and privatization (Corbo, *et al.* 1993; and CEPAL, 1994). In addition, expenditure reducing measures were taken next to monetary reform. In support of and conditioning the reforms, ample foreign aid became available, reaching record heights of 50 per cent of GDP and virtually all liquid.

As it turned out, the aid helped to stabilize the economy, but - along with the trade liberalization - it also promulgated a consumption boom. The aid-supported structural adjustment process has not led to economic reactivation during 1990-94. In the second half of 1992, various results became visible with the rate of inflation below an annual 6 percent, down from 7,500 per cent in 1990. The generous foreign aid from the US, Western Europe and the multilateral agencies supported the process, including the near elimination of the black market for foreign exchange, while a fixed official exchange rate could be defended and help to contain inflationary expectations. At the same time, however, high aid inflows sustained a large trade deficit and financed (indirectly) a substantial increase in private consumption, from 57 to 74 per

cent of GDP between 1990 and 1993. It can be argued that the consumption boom was inherent to the adjustment programme. Consumption booms have been a common feature in countries combining exchange rate stabilization with measures towards substantial trade and financial liberalization and with support of high capital (aid) inflows. Such booms in non-essential consumption demand have been witnessed in the 1970s in the Southern Cone countries and recently in Mexico. The stabilization of the exchange rate and the lowering of import tariffs cheapens the cost of previously prohibitive consumer goods, while the financial liberalization-*cum*-capital inflows may stimulate the expansion of consumer credits. This could happen despite falling real incomes and rising unemployment. This way, even with fiscal austerity, aid flows may prove highly fungible and - together with the liberalization measures - stimulate private consumption at the cost of private savings and investment. As a further result, the economy failed to recover, however. Real GDP fell by 0.1 per cent per year in 1990-93, while per capita income dropped at a rate of 3.4 percent. Only in 1992 the economy witnessed a slight positive growth rate.

The new regime so far also has been unsuccessful in stimulating export growth. The stabilization attempts under the Sandinista government during the late 1980s which involved massive devaluations of the exchange rate and domestic price policies aimed at stimulating the production of basic grains and export crops, had already led to a recovery of agricultural exports (except cotton, which suffered from a collapse in world market prices). However, as indicated by Figure 6.2, during 1990-94 commodity exports stagnated again. Two domestic factors contributed to this result. Firstly, the real exchange rate barely depreciated after 1991. Achieving a real depreciation was hampered by the government's own policies, as these relied on high aid inflows and the use of the exchange rate as a nominal anchor through which most domestic prices and the value of financial assets are indexed. In consequence, relative prices shifted against exportables. Secondly, next to the undesired relative price shift, the domestic credit squeeze virtually cut off agricultural producers from bank credits. Equally, other supply constraints, such as inadequate infrastructure and marketing systems and conflicts over property rights, hampered agricultural production and exports (see Vos, 1994).

Figure 6.2



High aid inflows permitted the use of the exchange rate as the nominal anchor in the economy and this has probably been crucial in the reduction of inflationary expectations. However, it also underlines the fragility of the current macroeconomic stability which seems to hang entirely on the ample availability of foreign finance. The response of producers and private investors has been anemic to the structural reform measures due to the mentioned unresolved supply-side problems. Non-inflationary deficit financing is fully dependent on foreign aid availability and so is most of the public investment programme. With the economy in a downswing, domestic resource mobilization is highly problematic and a reduction in the aid inflows is likely to undermine macroeconomic stability. But, clearly, also with the current levels of aid, economic growth is not ensured.

6.3 Shifting patterns of aid

Before 1970, Nicaragua's dependence on international assistance was quite limited. In 1970, the total external debt amounted to US\$ 147 million, less than 20 per cent of GDP, half of it being concessional. However, reconstruction needs after the earthquake of 1972 led to a spurt in public expenditures and import demand. Internal and external balances widened further as a consequence of rising costs of the emerging civil war and ensuing capital flight. As government revenue did not increase, foreign savings had to fill the gaps. Donations from abroad, as well as concessional lending, increased in importance after the earthquake. The Inter-American Development Bank (IDB) provided most multilateral support (de Franco 1994). As for bilateral assistance, the United States entirely dominated the picture, although some EC member countries like Germany and the UK increased their aid levels. Nevertheless, the bulk of financial resources were supplied by commercial banks in the form of long and medium-term loans on market terms to the public sector. At the end of the decade, foreign debt had passed US\$ 1 billion, equal to 70 per cent of GDP. The share of concessional debt declined from half to less than one third of the total external debt.

After the Sandinista revolution, foreign aid altered in structure, size and form. Capital flight and reconstruction needs from the war damages required that there be sufficient foreign exchange for the imports of both consumer goods and producer goods. Immediately after the

toppling of the Somoza regime, there was a large inflow of resources from the donor community as a whole, particularly from the World Bank and the IDB and a wide range of bilateral donors, including the US, Western Europe, socialist countries and Latin American countries. A considerable part of aid was given as aid-in-kind to deal with the most acute needs: food, machinery, medical equipment and so on. Some countries (mainly Latin American) extended commercial credits. Mexico and Venezuela also agreed to supply oil to Nicaragua on generous terms. Hence, the new regime was able to finance critical imports and, at least in the short run, meet its financial obligations to foreign creditors, debt payments which had accrued under the last years of the Somoza regime.

With the new foreign policy of the Reagan administration, however, financial support from the US ceased after 1981 (Heriot, 1982; and TNI-CRIES, 1988). The position of the US also had considerable influence on multilateral financing. With its dominant position in the IDB and the World Bank, the US used its vetoing power to block new lending. Heavily indebted and facing falling export revenues, the Nicaraguan government found it increasingly difficult to meet old and new contractual payments schedules. Under US pressure, and as Nicaragua began to accumulate payment arrears with the multilateral banks, the multilaterals reduced their assistance in the years that followed. From 1983 onwards, no new loans were granted from the IDB, and similarly, the World Bank stopped its lending in 1984. As Nicaragua failed to pay its oil bill, Mexico and Venezuela withdrew their support, although, after 1985, Mexico resumed its position as an important trading partner.

Although multilateral grant aid was maintained, the non-availability of multilateral lending threatened to impose severe financial constraints. Bilateral aid had to increase in order to avoid a collapse of import capacity. Some Western European countries, among which Norway, Finland, France, the Netherlands, Norway and Sweden, did maintain their financial support throughout the period albeit at a varying degree. This support was insufficient, however, to compensate the export losses created by the US trade embargo. Faced with an increasing domestic demand for resources and a sharp reduction in foreign supply of funds, Nicaragua turned to the socialist block. In the latter half of the 1980s, foreign financing came

predominantly from countries like the USSR, East Germany, Bulgaria and Cuba. Socialist countries provided some 40 per cent of total external assistance between 1981-1983 and more than 70 per cent between 1984-86 (Table 6.1).

The US trade embargo and the loss of oil supply in combination with severe foreign exchange constraints resulted in an extremely limited choice of trading partners. Dependent on imports for both consumption and production, with feeble export earnings, and cut off from both important trading partners and most international financial resources, the Nicaraguan government had no option but to accept the goods and the terms offered by the socialist block. Trade with the USSR would, among other things, guarantee access to essential supplies of oil. In general, the socialist countries charged higher interests on their credits than other donors. On the other hand, repayment obligations were "softer" and there was an understanding that there would be some degree of freedom for rescheduling when necessary (TNI-CRIES, 1988).

Nicaragua's trade relations changed with the aid sourcing. Aid funds from the socialist block were almost exclusively source-tied balance of payments support, i.e. these were to be used for the purchase of goods from the donor countries. Fuel, machinery, transport equipment were thus provided through import credits or in the form of direct commodity aid. More than two thirds of total assistance came in the form of commodities tied both to donor-supply and specific use (Taylor *et al.* 1989). Evidently, the new trade pattern had little to do with comparative advantage and efficient international exchange of goods and services. The new trading partners had little interest in Nicaraguan traditional or nontraditional exports, and so the bilateral trade balance remained negative.

Aid in the 1980s led to the creation of counterpart funds. This system, however, entailed some difficulties. First of all, aid was to a large extent channelled from donors directly to various parts of the public sector, and it proved very difficult to centralise the administration through the funds. Secondly, using the socialist countries' overvalued currencies as accounting prices would have resulted in overvalued domestic prices. Instead, the Nicaraguan government chose to heavily subsidise imported goods. When the black market exchange rate premium

Table 6.1 Foreign Aid by Source, 1979-87 (as percentage of total)

	1979	1980	1981	1982	1983	1984	1985	1986	1987
Credits	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multilateral	78.4	32.5	11.9	18.8	15.0	0.0	0.0	0.0	0.0
Bilateral	20.6	67.5	88.1	81.3	85.1	100.0	100.0	100.0	100.0
Western Europe	5.4	12.0	8.3	7.8	19.8	5.3	11.5	12.9	18.6
Spain	0.0	0.0	3.4	2.6	8.0	0.0	3.8	12.9	14.4
Netherlands	0.0	3.3	2.5	0.3	5.9	1.5	1.1	0.0	1.6
Americas	15.2	36.2	45.6	27.8	19.1	16.2	1.4	9.6	0.0
Mexico	0.0	14.0	37.2	22.8	12.3	7.3	0.0	0.0	0.0
Venezuela	0.0	2.3	3.6	5.0	0.0	0.6	0.0	0.0	0.0
USA	0.0	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asia and Africa	0.0	0.0	14.1	0.6	7.7	0.0	0.0	5.0	0.0
Socialist countries	0.0	19.3	20.1	45.1	38.5	78.5	87.0	72.5	81.4
Grants	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multilateral	10.5	16.9	12.0	14.7	6.9	12.2	4.8	10.4	16.8
Bilateral	89.4	83.1	88.0	85.3	93.0	87.7	95.1	89.6	83.1
Western Europe	35.6	11.6	14.3	15.2	11.1	14.6	6.2	10.6	31.7
Sweden	6.4	3.8	4.5	4.6	2.9	2.5	2.4	5.8	14.5
Netherlands	7.3	4.4	0.6	2.1	1.9	1.9	1.2	0.6	0.0
Americas	46.3	23.1	22.1	6.9	1.9	1.0	0.6	0.7	0.2
Asia and Africa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0
Socialist countries	7.5	48.4	51.6	63.2	80.0	72.1	88.3	76.6	51.2
Total in US\$ million									
Credits	271.7	528.7	728.7	498.9	437.8	628.3	924.5	201.2	229.2
Grants	88.8	147.8	73.8	98.8	181.2	144.3	272.1	316.7	155.6

Source: Taylor *et al.* (1989), based on data supplied by *Ministerio de Cooperación Externa* (MCE).

began to expand at an accelerating pace, the subsidised imported goods became ridiculously cheap. In terms of black market dollars, the domestic price of the Eastern European capital goods was so low that it would even pay to purchase and dismantle the machines and use the components as spare parts. Import costs rose for the government as it had to repay the loans in hard currency, while the value of the loan reflected the cost of imports valued at overvalued rubles and other soft currencies. Importers could acquire the aid-financed goods at a subsidized price valued at the official rate of the *córdoba*. These subsidies put severe strains on the fiscal balance. The problem was eased somewhat after the devaluations and other adjustment and stabilisation measures introduced in 1988, after which the demand for capital goods completely vanished.

The combined aid and trade diversion restricted the Nicaraguan import capacity in real terms. Freely disposable unconditioned liquid funds for investment were scarce. Import costs spiralled, partly reflecting increased transport costs with the new trading partner. Moreover, as indicated, the contractual prices tended to exceed the market value of the imported commodities, an effect which was reinforced by the misaligned exchange rates. More importantly, Nicaragua was confined to machinery and equipment of inferior quality, often obsolete and inadequate for the country's needs to improve productivity. A major drawback was that the existing capital stock, inherited from investments in the 1970s and early 1980s, originated from the US and Europe, and was incompatible with the new suppliers' technology. Thus, reparation, rehabilitation and maintenance of older equipment became virtually impossible, as no spare parts could be imported. Relics from the socialist aid in the form of (unused) trucks and tractors still occupy some hectares of land in the vicinities of the Central Bank building in Managua.

Much of the aid effort in the early 1990s has been related to the country's large outstanding external debt. Substantial payment arrears to the multilateral organs had to be resolved first in order to obtain new funding. Further, aid went in support of the drastic measures needed to stabilise the economy. Finally, funds have been provided to deal with the

physical and social costs of the civil war. Specifically, aid since 1990 served the following main purposes:

- (a) Disarmament - in 1990, between US\$ 40-60 million were used to disarm and reintegrate the *contra* rebels and finance a reduction of the armed forces, in an endeavour to demilitarise and pacify the nation.
- (b) Debt repayments and debt reduction - since 1990, significant amounts of aid have been used to service and reduce Nicaragua's public external debt. Debt has been reduced, but it still cannot be fully serviced. Relations with multilateral creditors have been normalized after eliminating arrears to the World Bank and the Inter-American Development Bank (IDB).
- (c) Stabilisation - substantial resources were granted at an initial stage to curb hyperinflation. Aid flows increased international reserves vastly and, consequently, decreased the pressure on the *córdoba*.
- (d) Replace internal financing of the fiscal deficit - especially in 1992 and 1993, the role of aid was to help finance the government budget. Non-aid government revenues are limited, while domestic financing of the deficit has been ruled out by monetary policy targets. Under this financial constraint, there is now a (near) one-to-one relationship between the fiscal deficit and aid, established by government decree. Investment in physical infrastructure, health and education is almost entirely dependent on the availability of external resources.

As a large part of the inflows has been used exclusively to pay some of the accumulated arrears, specifically to the World Bank and the IDB, actual net inflows have been notably smaller. In 1991, aid in terms of credit and grants to Nicaragua reached the extreme level of 90 per cent of GDP. However, almost half was in the form of debt cancellation (primarily of debt owed to USAID) and debt repayments, which substantially reduced the actual inflow of aid

(Table 6.2). An agreement on a Stand-by credit was signed with the IMF, only to be halted in December 1992, when the Fund claimed public expenditures to be too much out of control to justify continued lending. A new agreement on an Enhanced Structural Adjustment Facility (ESAF) loan for 1994-96, has been negotiated since Spring 1993. Negotiations have been difficult, in part because the Nicaraguan government had found it very difficult to adhere to the very strict conditionality implied by the agreement. Further, there was a resurgence of tension in US-Nicaraguan relationships as US Congress through the Helms amendment cut US\$ 116 million of a US\$ 731 million two-year package in 1992, on the grounds that the government would effectively still be in Sandinista hands.

Counterpart funds are now subject to stricter control. The monetary impact is ambiguous, as different donors apply different criteria. Some funds are immediately sterilised. On the other hand, some donors - such as Japan - use the counterpart funds system administered by the UNDP to allocate their aid and insists that the commodities imported be sold at a subsidised córdoba price (in the case of Japan, 80 per cent of the accounting price).

6.4 Aid and External Debt

External debt is about six times GNP and thirty-fold the value of 1993 export earnings. This enormous external debt overhang has been a crucial issue in the discussions between the Nicaraguan government and the donor community. It remains one of the fundamental obstacles to economic recovery, and as pointed out, has been central in the aid negotiations. Nicaragua still owes nearly US\$ 3 billion to the former socialist countries, out of a total debt of US\$ 7.5 billion.

In the debt renegotiations undertaken since 1990, different mechanisms have been used in the restructuring process: (i) "pure" debt forgiveness, (ii) swap of debt for non interest-bearing bonds, and (iii) debt-for-investment swaps, where investments funds thus freed are to be used according to donor preferences, e.g. for specific project support, for specific sector support, or for the privatisation process. The Nicaraguan government has clearly given highest priority to reestablishing sound relations with the most important international official creditors,

Table 6.2 Foreign Assistance, 1990-94 (US\$ million)

	1990	1991	1992	1993	1994
Credits	288.3	604.6	411.8	199.0	363.9
Liquid funds	1.6	156.1	334.7	86.7	187.7
Tied funds	286.7	72.9	45.8	99.4	176.2
Debt repayment	0.0	375.6	0.0	0.0	0.0
Capitalization of interest payments	0.0	0.0	31.3	12.9	0.0
Grants	201.6	844.4	378.6	290.7	204.1
Liquid funds	92.7	355.0	142.1	72.7	40.0
Tied funds	108.9	230.0	183.5	164.9	164.1
Debt forgiveness ¹	0.0	259.4	53.0	53.1	0.0
Total	489.9	1449.0	759.1	476.8	568.0
Liquid funds	94.3	511.1	476.8	159.4	227.7
Tied funds	395.6	302.9	229.3	264.3	340.3
Debt repayment	0.0	375.6	0.0	0.0	0.0
Debt forgiveness	0.0	259.4	53.0	53.1	0.0
Total excluding debt repayment and forgiveness	489.9	814.0	706.1	423.7	568.0

Notes: 1. Debt forgiveness by source: 1991: US-AID (US\$ 259.4 million); 1992: France (48.6) and The Netherlands (4.4).; and 1993: The Netherlands (34.6) and Finland(18.5).

Source: Ministerio de Cooperación Externa. Data for 1994 are preliminary estimates of expected foreign assistance.

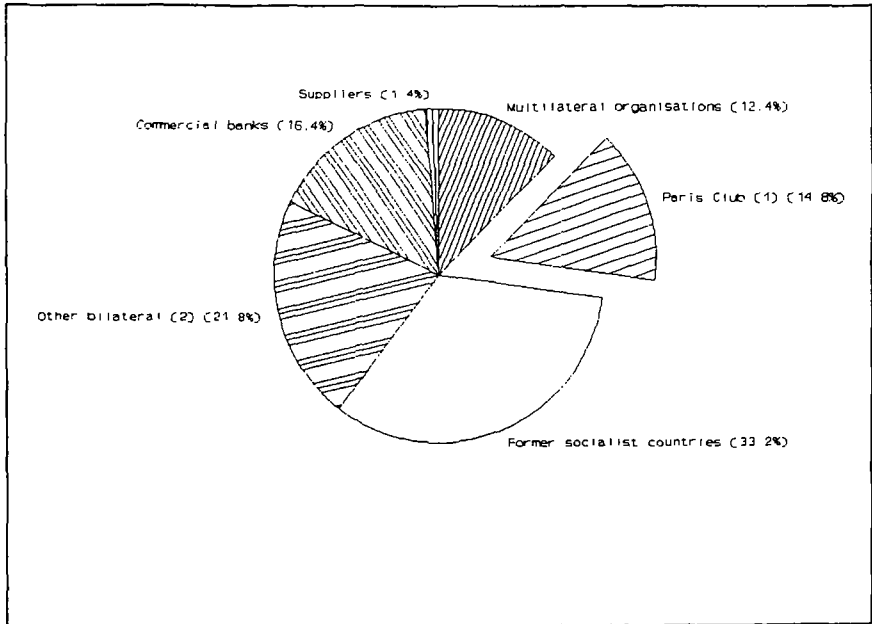
mainly the multilateral financial institutions and the Paris Club. Nicaragua paid back more US\$ 300 million of accumulated arrears to the World Bank and the IDB. In December 1991, the Nicaraguan government reached an agreement with the member countries of the Paris Club on a reduction of 50 per cent of the arrears. The agreement also opens up for the possibility of further negotiations on rescheduling by the end of 1994, contingent on reaching an ESAF-agreement with the IMF.

While the focus has been on multilateral creditors, repayment to the commercial banks has been given lowest priority and remain largely unresolved. Instead, the commercial debt overhang has become an issue in aid negotiations, where aid supposedly should be used for debt buy-backs etc. In June 1993, representatives of the Nicaraguan government met with the donor community in an effort to address the problem. The idea was to launch an operation to repurchase commercial debt, to initiate negotiations with commercial creditors, and simultaneously secure the aid funding necessary for the manoeuvre. However, the exercise was largely a failure, as Nicaragua only managed to obtain US\$ 54 million, less than three per cent of total outstanding debt with the commercial banks.

As of today, the debt situation remains unresolved, despite the large amounts of external financing which have been granted for the exclusive purpose of debt repayments. With no further reductions, debt service for the next years would equal approximately US\$ 800 million per annum, which, given yearly export incomes around US\$ 300 million, results in a debt service ratio of 250-300 percent. The gap between available resources and resources needed is alarming.

Presently, almost half of total long, medium and short term external debt is owed to ex-socialist countries (excluding debt to former East Germany) and to commercial banks, mostly in the form of accumulated payment arrears (Figure 6.3). There is little belief that this debt will ever get paid, which is reflected in the low value on the secondary market, where it sells at 8 per cent of face value. Discussions on rescheduling with e.g. Russia, as well as negotiations on alternative solutions for the commercial debt, will hopefully continue during 1994. High

Figure 6.3
External Debt Outstanding by Source, 1993



Notes to Figure 6.3:

1. Of the 14.8 per cent that make up the Paris Club debt, a share of 1.8 per cent is not renegotiable, 4 per cent was renegotiated in 1991 and 9 per cent can be renegotiated. Debt to former East Germany makes up more than half of the latter category. The East German debt is not included in the figures for former socialist countries.
2. Mainly Latin America, China and India.

priority debt constitutes approximately one fifth of total, and includes debt with the multilateral financial organisations and the part of the Paris Club debt which already has been renegotiated or is non-negotiable. The remaining debt to the countries in the Paris Club as well as debt to other official bilateral creditors and suppliers (e.g. Brazil and the Central American countries) will most likely be subject to further renegotiations during 1994.

From the Nicaraguan side, it is strongly felt that the country should qualify for a large amount of debt relief in line with the Polish and Egyptian cases. Of specific importance is the question of Nicaraguan debt with former East Germany, which is now included in the German debt. As this debt makes up more than half of the Paris Club debt which remains to be negotiated, it will be a crucial issue in future discussions. So far, however, there are no clear signals of a favourable solution for Nicaragua.

6.5 The Macroeconomics of Aid to Nicaragua

Aid and Economic Growth

The traditional economic justification for development aid is that it will increase growth in the recipient country. Recent demands for additional foreign assistance by the Chamorro government to the multilateral institutions have been expressed in the same vein: the funds should foster economic growth. Much of the traditional argument has been based on the two-gap approach in which growth is either limited by domestic savings or foreign exchange availability. If the binding constraint is a lack of foreign exchange, then additional capital inflows will raise import capacity, import-constrained investment and thereby economic growth. If g is the growth rate of output, K the stock of productive capital, I investment in fixed assets, M is import capacity and AID is the amount of foreign assistance, one could summarize the argument as:

$$g = g(K, \dots) \quad (6.1)$$

$$\Delta K = I = k(M, S, \dots) \quad (6.2)$$

$$M = m(AID, \Delta F_{oth}, X, \frac{P_x}{P_m}, \dots) \quad (6.3)$$

Starting from equation 6.3, more aid will lead to a higher import capacity, thus higher investment (equation 6.2) and ultimately higher growth (equation 6.1).

This fairly simple view has been challenged for various reasons.¹

(1) One is fungibility: aid is said to be fungible if aid inflows primarily intended to raise investment and imports do not lead to an increase in these variables by the same value. Aid may lead to higher government consumption or lower taxes, which will affect the national savings level (S) and thus offset some of the positive effects of aid on investment and growth (equation 6.2). Aid inflows could also displace other foreign borrowing (ΔF_{oth}) or reduce exports (X) through 'Dutch disease' effects (i.e. an appreciation of the real exchange rate), and thereby import capacity may not increase by the full amount of the aid inflow (equation 6.3). Of course, these different forms of fungibility may occur simultaneously.

(2) A second reason why there may not be a straightforward positive relation between aid and growth is that aid inflows may affect incentives and create economic distortions. One type of disincentive effect was just mentioned: aid may lead to a real exchange rate appreciation and affect export growth. Another could be related to particular forms and uses of aid, e.g. food imports affecting agricultural prices and incentives to farmers. Aid provided in the form of technical assistance may provide a disincentive to the demand for local skilled labour and build up of local staff capacity. On the other hand, aid related to investment in social infrastructure and services may positively impact on growth and provide new incentives for productive

investment through the formation of human capital. This element was not included in the growth equation (6.1) and also will not show as direct increases in (physical) investment (I) or imports (M). Moreover, the effect of investment in human capital on labour productivity and growth is likely characterized by important lags, so the relation will not be immediate. The same point will apply to many investment projects in physical infrastructure.

(3) A third reason is that aid may affect macroeconomic policies, which in turn may influence aggregate demand and incentive mechanisms. In Nicaragua, the inverse seems to have applied after the Sandinista revolution, when the change in policies and, more importantly, the politics forced a shift from Western aid donors to aid from the former socialist countries, implying a drastic change in the modalities of aid. After 1990, the new government stood for a political break with the past. While aid initially came in generously with apparently fairly loose strings attached, official external assistance is now virtually fully tied to the implementation of specific structural adjustment policies under the guidance of the IMF and the World Bank.

In Nicaragua, mechanisms underlying the link between aid, import capacity, investment and growth, as well as those underlying the effect of aid on domestic savings, government revenue and expenditures have varied from period to period depending on the nature of the aid inflows and the economic policy regime.

An accounting framework

Following the methodological framework set out in Chapter 2, we take the national accounting identity:

$$\text{Savings gap} = \text{Current account deficit} = \text{Capital inflow} \quad (6.4)$$

as a starting point for the analysis of the macroeconomic impact of aid in Nicaragua. The gap between gross national savings and investment (savings gap) must be financed by a net inflow of foreign savings (capital inflow), which in turn must equal the current account deficit. Development aid was considered thus far as part of the capital inflow (equation 6.3), but in

practice aid tends to be either a grant - that is an official transfer (OT) - recorded on the current account or as a concessional long-term loan (ΔFL_c). The net aid inflow (net of amortization on past loans) is therefore given by:

$$AID = OT + \Delta FL_c \quad (6.5)$$

The current and capital accounts of the balance of payments may be written in more detail as:

$$X - M + (NFP + OT + PCT) = - (\Delta FL_c + \Delta FL_{oth} + \Delta FS + OKI + \Delta R) \quad (6.6)$$

where X and M are exports and imports of goods and services, NFP net factor payments, OT and PCT net official and private transfers, ΔFL_c net disbursements of concessional loans, ΔFL_{oth} net disbursements of other long-term loans, ΔFS net short-term inflows and OKI net other capital inflows (including direct foreign investment) and ΔR the change in reserves.

Combining equations (6.5) and (6.6) gives the accounting identity for import capacity (realized imports):

$$M = X + NFP + PCT + AID + \Delta FL_{oth} + \Delta FS + OKI + \Delta R \quad (6.7)$$

The orthodox view is that aid leads to a one for one increase in imports. Obviously, countries with a large aid inflow must have a large trade or current account gap. It could be said that aid fills that gap, but - as pointed out in the introduction - it may as well *create* that gap, either because aid is exogenous and generates a certain import capacity or because aid affects other variables in equation (6.7) and domestic spending aggregates.

Aid and Import Capacity

This section details the major factors determining the changes in import capacity in Nicaragua during 1970-1993. Using equation (6.7) as a starting point, we identify *changes* in import capacity both in price and volume terms, applying the dollar price index of Nicaraguan imports as the appropriate deflator. The precise methodology is explained in Appendix A6.1, the results (expressed in millions of US\$) are in Table 6.3.

Table 6.3
Decomposition of Import Capacity, 1971-93
(absolute changes in millions of US\$)

Year	ΔM	Price effects		Volume effects										Interaction effects
		Δ(P _X /P _m) ·X ₉₀	Δ(1/P _m) ·(M ₉₀ -X ₉₀)	ΔX	ΔPCT	ΔOT	Δ(ΔFL _c)	Δ(ΔFL _{nc})	ΔOKI	ΔDS	ΔARR	ΔRSC	Δ(ΔR)	
1971	34.7	0.3	-0.1	-26.5	6.2	4.7	43.7	-108.8	-47.5	32.4	0.0	0.0	66.8	63.6
1972	4.4	-17.3	-5.8	203.3	-0.8	5.1	-15.2	-4.9	-138.1	13.2	0.0	0.0	-98.6	63.4
1973	222.7	99.7	-11.7	-205.9	4.9	131.6	22.1	115.0	115.2	3.7	0.0	0.0	-8.1	-43.7
1974	47.3	-196.9	-14.0	63.3	2.2	-127.9	11.4	-52.6	34.7	51.9	0.0	0.0	260.3	15.0
1975	-153.6	-117.0	-1.1	116.0	-0.2	1.0	-6.9	-31.5	-66.1	14.5	0.0	0.0	-41.2	-21.1
1976	-27.5	204.7	-0.7	-8.9	4.7	-11.8	-10.4	-140.2	51.2	-58.4	0.0	0.0	-121.7	64.1
1977	315.7	58.6	-2.0	10.2	-3.8	-0.8	14.3	242.2	-189.8	0.1	0.0	0.0	162.9	23.8
1978	-329.1	-136.7	-2.2	113.7	-4.4	-3.2	-3.6	-235.2	-169.0	-17.5	0.0	0.0	154.0	-25.1
1979	-375.3	-16.0	-3.2	-215.2	-2.9	95.7	-4.6	31.6	-74.2	103.2	0.0	0.0	-258.4	-31.4
1980	292.1	-78.0	-3.2	-243.1	-9.1	13.4	120.8	3.1	504.6	-206.8	121.1	69.7	9.1	-9.5
1981	94.9	-90.6	-0.4	142.7	28.9	-66.5	-23.5	143.0	17.5	17.5	-48.2	32.5	-58.1	-0.0
1982	-188.5	6.8	0.7	-102.0	-24.1	-11.2	-34.3	85.6	-303.6	-3.3	18.9	21.8	143.4	12.8
1983	91.2	28.5	0.5	44.0	1.7	35.4	71.9	-141.4	-144.5	-282.0	220.0	317.3	-51.5	-8.8
1984	31.8	1.9	0.3	-32.7	-1.8	14.8	25.4	-47.3	77.2	78.2	39.2	-176.9	51.3	2.3
1985	52.2	-39.9	0.2	-103.9	-7.5	28.5	209.8	67.4	-12.6	7.4	-61.0	-97.1	40.3	20.8
1986	-157.8	-100.1	-1.2	-34.9	4.7	-9.2	-143.4	114.4	-249.0	104.0	45.0	-4.0	73.6	42.3
1987	27.5	47.9	-0.5	-21.2	0.7	24.6	-79.3	-63.7	254.2	-197.0	217.0	-155.7	12.4	-11.8
1988	195.1	41.5	4.4	10.7	1.3	100.5	19.7	-137.7	438.4	-63.7	23.3	17.3	-238.1	-22.5
1989	-234.6	2.2	-0.1	103.0	5.9	-27.2	231.1	-233.4	-418.5	-90.5	130.0	-24.9	105.0	-17.3
1990	-54.6	-37.9	-1.6	79.6	5.1	20.2	-174.1	146.8	-21.2	30.7	-47.2	0.0	-47.0	-8.0
1991	144.8	-11.2	-0.8	-71.2	-15.7	696.1	-137.6	1634.6	223.0	-1917.8	-918.1	699.7	-55.1	19.1
1992	69.8	-21.4	0.2	-32.7	-2.9	-506.9	276.4	-487.4	73.0	1184.2	1240.7	-1693.4	22.8	17.2
1993	-88.0	10.6	0.0	76.0	-0.1	-85.6	-176.9	-41.2	102.1	234.4	-115.9	-170.3	105.7	-26.7

Source: Calculations based on Banco Central de Nicaragua, Balance of Payments data.

Table 6.3 shows once more the severe instability in Nicaragua's import capacity over the past decades. The trend level (but what's in a name in the present case) of imports is about US\$ 500 million, but deviations from this trend level have been 50 per cent or more in many years. Such fluctuations are too violent by any standard.

During the early 1970s import capacity increased, with a strong expansion (of US\$ 223 million) in 1973, due to substantial aid and other capital inflows associated with the aftermath of the 1972 earthquake. From 1975 onwards, import capacity started to collapse (except 1977) reaching an all time low in 1978-79 when capital flight (ΔOKI is an indicator) peaked and exports (ΔX) collapsed. Import capacity recovered during most years of the 1980s, associated with generous aid inflows, accumulation of arrears and refinancing of external debt. However, recovery was interrupted by steep falls in 1982, 1986 and 1989, years characterized by either strong falls in the export volume and/or access to adequate external financing.

In 1989 and 1990, import capacity fell, despite a substantial recovery of export volumes. Falling aid inflows ($\Delta OT + \Delta FL_c$) from socialist countries and a resurgence of capital flight (ΔOKI) in the wake of the 1990 elections were the main factors behind this trend.

Massive aid inflows enhanced import capacity during 1991-93. During 1991, official transfers increased by nearly US\$ 700 million, but import capacity by only US\$ 145 million. Much of the difference went into debt servicing (ΔDS) and payment of accumulated arrears in the past (ΔARR) as part of the strategy to get to terms with the international financial community. An even larger source of refinancing of external debt (US\$ 1.6 billion) was from the same institutions, but supplied on non-concessional terms (ΔFL_{non}). Debt relief and cancellations (among others of USAID debt) during 1991 permitted a much lower debt servicing in 1992 and compensated for lower levels of net aid inflows. In the same year, arrears accumulated again, however, but mainly on socialist country and commercial bank debt. Levels of aid inflows, though still high compared to historic levels, fell further in 1993 and contributed to the decline in import capacity in that year. The drop in aid inflows is generally felt to signal a trend that Nicaragua will have to settle for a lower level of foreign assistance in the coming

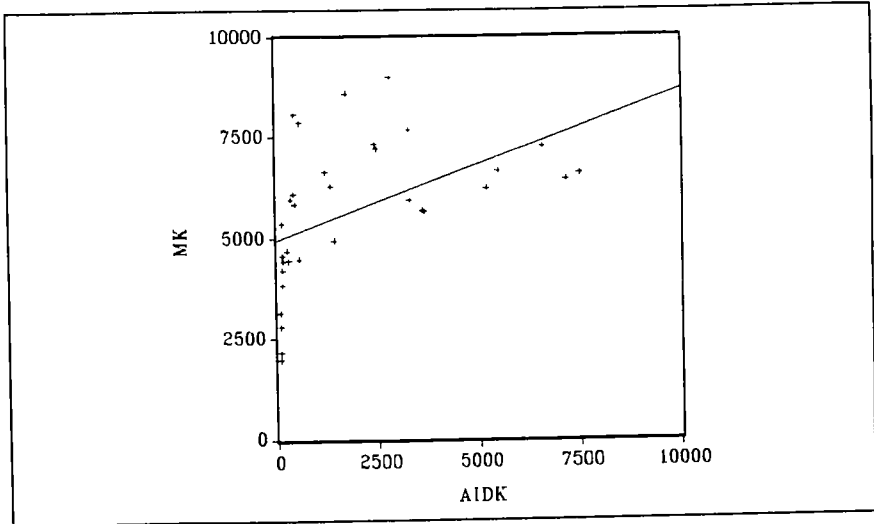
years and hopes will have to be set on a recovery of exports (ΔX) and other capital inflows (ΔOKI , such as direct investment, return of capital flight). Both variables had a positive sign in 1993, but - particularly the export volume - are as yet not part of a strong upward trend. To the extent import capacity is the main constraint on growth in Nicaragua, the observed trends sketch Nicaragua's uncertain economic future - to put it mildly.

Table 6.3 also highlights the importance of external shocks in import and export prices on Nicaragua's import capacity. Terms of trade effects ($\Delta P_x/P_m$) have been mostly (strongly) negative during most of the 1970s and (mildly) positive during the 1980s, except for 1985 and 1986 when the terms of trade fell rather steeply. During the first half of the 1990s, the terms of trade have again been unfavourable. In both periods, however, foreign trade prices only played a minor role in explaining the trends in import capacity.

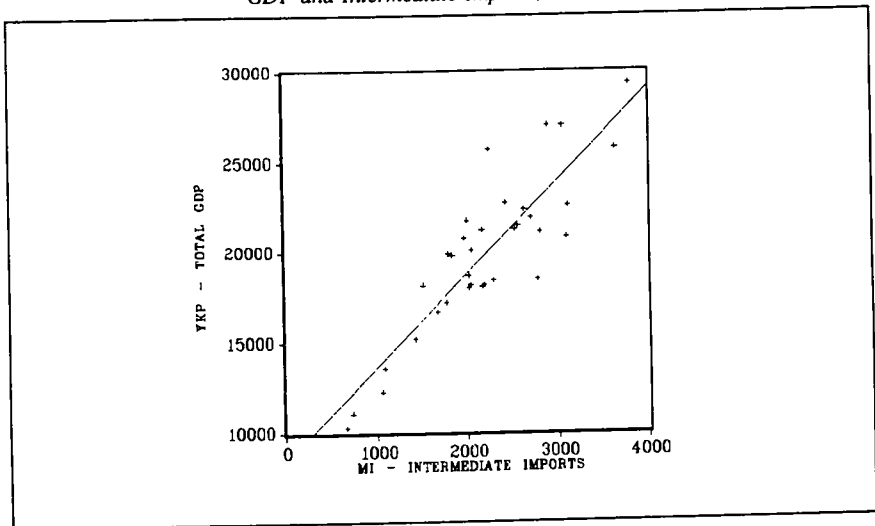
In sum, the decomposition analysis clearly suggests that there is no one to one relationship between aid inflows and import capacity. This is visualized in the scatterplot of changes in the aid volume² and changes in real import capacity (Figure 6.4). The two variables are not significantly correlated. In fact, none of the components that explain the changes in Nicaragua's real import capacity show single-handedly a strong correlation with the import volume. Appendix Tables A6.1-3 give the additional evidence from which it can be concluded that:

- (a) There is a weak direct link between aid inflows and import capacity.
- (b) Aid inflows are strongly and positively correlated with other, non-concessional long-term capital inflows, suggesting a crowding in between the two types of aid. However, this only holds for the period after 1980 (Table A6.3), with the correlation strongly driven by the strong absolute increases in both types of flows in 1990-93.
- (c) Particularly in 1980-93, aid inflows - or, rather the grants (OT) component of it - tend to increase with debt servicing, suggesting that a large share of grants has gone into debt

*Figure 6.4 GDP and Total Import Volume
(millions of córdobas of 1980)*



*Figure 6.5
GDP and Intermediate Imports, 1960-93*



servicing.³ This strong link is maintained whether taking debt service payments due or those actually paid.

- (d) Increases in aid inflows are weakly, but negatively correlated with export volumes. The negative link is stronger in the 1970s (Table A6.2) when aid inflows were low, than in the 1980s and 1990s (Table A6.3) when aid inflows were high. In other words, this simple correlation does not seem to make the case for a typical Dutch disease phenomenon directly linked to the aid inflow.
- (e) In 1980-93, import capacity appears most dependent on changes in other capital inflows (OKI) and uses of foreign exchange reserves (ΔR). The link with other capital inflows is not surprising since these relate, in the case of Nicaragua, mainly to short-term (trade) credits and, if it has a negative sign, capital flight. The link with reserve movements seems to express that over the past decade and a half, import capacity has been pushed to its maximum as permitted by available reserves, which seems consistent with the permanent foreign exchange problems the country had to face.

Imports and Economic Growth

Economic growth may be foreign-exchange constrained if export earnings and net aid and other capital transfers are insufficient to purchase necessary imports of intermediates and capital goods required in the production process. In some developing countries aid inflows may support investment projects adequately, but may leave a foreign-exchange shortage to purchase foreign inputs and repairs, making imported intermediates the effective binding constraint on growth - for the example of Tanzania, see Doriye *et al.* (1993).

In Nicaragua, the level of imports increased from around US\$ 100 million in the early 1960s to US\$ 450 million in the 1970s and around US\$ 750 to 850 million in the 1980s and 1990s (Table 6.4). The share of intermediate goods (excluding fuels) rose during the 1960s and 1970s to almost half of total merchandise imports, a shift related to the modernization of export agriculture and the build up of an industrial sector. During the 1980s this share fell; initially,

Table 6.4 Import Composition by Sector, 1960-93 (per cent share of total imports)

	1960-65	1966-70	1971-77	1978-79	1980-84	1985-89	1990-93
Consumer goods and fuels	41	35	33	37	40	33	47
Consumer goods	n.a.	n.a.	29	26	21	17	31
Non-durable	n.a.	n.a.	23	21	18	13	26
Durable	n.a.	n.a.	6	6	3	3	5
Fuels	n.a.	n.a.	4	11	20	16	16
Intermediate goods	36	41	45	46	36	37	28
For agriculture	n.a.	7	13	5	6	10	4
For industry	n.a.	n.a.	11	26	23	20	0
For construction	n.a.	n.a.	2	4	3	4	0
Investment goods	23	24	23	17	23	30	25
For agriculture	n.a.	n.a.	2	2	3	3	2
For industry	n.a.	n.a.	14	11	14	16	13
Transport equipment	n.a.	n.a.	6	4	7	11	10
Other	n.a.	n.a.	0	0	0	0	0
Total	100	100	100	100	100	100	100
<i>Memo items:</i>							
Total (US\$ million)	108.70	189.20	446.80	477.00	859.10	779.10	735.20
Annual GDP growth rate	10.10	3.80	5.90	-17.70	1.90	-4.10	-0.20

Source: Central Bank of Nicaragua and Ministry of Economic Development.

servicing.³ This strong link is maintained whether taking debt service payments due or those actually paid.

- (d) Increases in aid inflows are weakly, but negatively correlated with export volumes. The negative link is stronger in the 1970s (Table A6.2) when aid inflows were low, than in the 1980s and 1990s (Table A6.3) when aid inflows were high. In other words, this simple correlation does not seem to make the case for a typical Dutch disease phenomenon directly linked to the aid inflow.
- (e) In 1980-93, import capacity appears most dependent on changes in other capital inflows (OKI) and uses of foreign exchange reserves (ΔR). The link with other capital inflows is not surprising since these relate, in the case of Nicaragua, mainly to short-term (trade) credits and, if it has a negative sign, capital flight. The link with reserve movements seems to express that over the past decade and a half, import capacity has been pushed to its maximum as permitted by available reserves, which seems consistent with the permanent foreign exchange problems the country had to face.

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Consumer goods	n.a.	n.a.	29	26	21	17	31
Non-durable	n.a.	n.a.	23	21	18	13	26
Durable	n.a.	n.a.	6	6	3	3	5
Fuels	n.a.	n.a.	4	11	20	16	16
Intermediate goods	36	41	45	46	36	37	28
For agriculture	n.a.	7	13	5	6	10	4
For industry	n.a.	n.a.	11	26	23	20	0
For construction	n.a.	n.a.	2	4	3	4	0
Investment goods	23	24	23	17	23	30	25
For agriculture	n.a.	n.a.	2	2	3	3	2
For industry	n.a.	n.a.	14	11	14	16	13
Transport equipment	n.a.	n.a.	6	4	7	11	10
Other	n.a.	n.a.	0	0	0	0	0
Total	100	100	100	100	100	100	100
<i>Memo items:</i>							
Total (US\$ million)	108.70	189.20	446.80	477.00	859.10	779.10	735.20
Annual GDP growth rate	10.10	3.80	5.90	-17.70	1.90	-4.10	-0.20

Source: Central Bank of Nicaragua and Ministry of Economic Development.

because of rising costs of fuel imports and, subsequently (in 1985-89), because of rising capital good imports related to aid inflows from the socialist countries. The share of consumer good imports fell during the Sandinista government, but rose steeply to one third in 1990-93 as a consequence of the consumption boom created by the trade liberalization under the adjustment policies of the Chamorro government.

The available evidence indicates that the relationship between aid, imports and growth has been a complex one in the case of Nicaragua:⁴

- (a) Overall GDP and GDP growth are positively related to foreign exchange availability for intermediate imports (Figure 6.5), but this obscures the fact that agricultural output does not seem to be constrained by imported inputs (Figure 6.6a)⁵, while - in contrast - industrial output seems strongly import dependent (Figure 6.7a). Thus, emerging foreign exchange constraints, e.g. due to falling aid inflows, will hit essentially industrial output and employment.
- (b) The direct link between output growth and capital good imports is weak (insignificant) in the case of both agriculture (Figure 6.6b) and industry (Figure 6.7b). Yet, in the aggregate, investment in fixed assets is significantly dependent on import capacity. Econometric analysis suggests considerable shifts in the marginal import-investment ratio. Table 6.5 shows the estimation results using a reduced-form 'externally constrained accelerator' investment model, which assumes investment demand is a function of import capacity and last year's investment decisions.⁶ After studying the structural breaks in the investment function, it appears that the marginal import-investment ratio doubled from 0.35 in the relatively prosperous period from 1960-77 to 0.70 in 1980-84, but it subsequently fell to 0.20 in 1985-89 and 1990-93.⁷

This pattern fits well into the political economy of aid to Nicaragua. The upward shift in the early 1980s seems consistent with the investment boom in this period and the shift towards socialist aid donors who supplied assistance largely in the form of investment

Figure 6.6a
Agricultural output and intermediate imports, 1960-1993

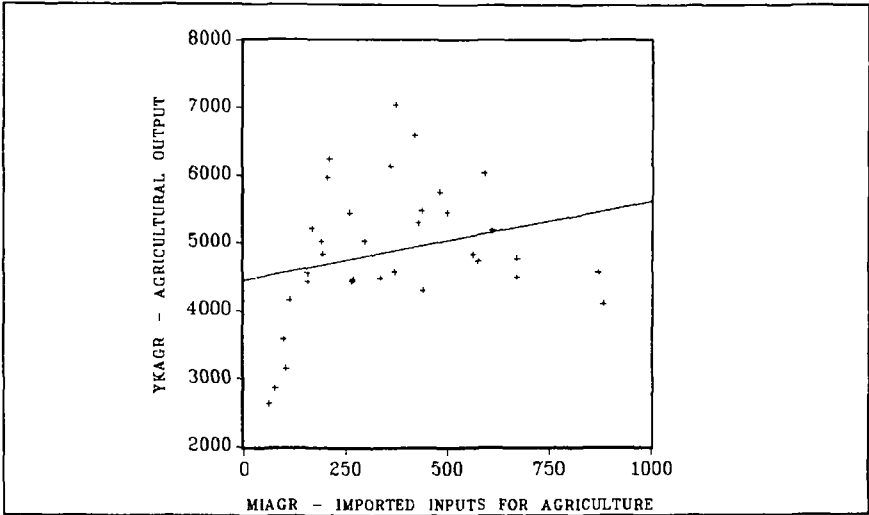


Figure 6.6b
Agriculture and Total Imports for Agriculture, 1960-93

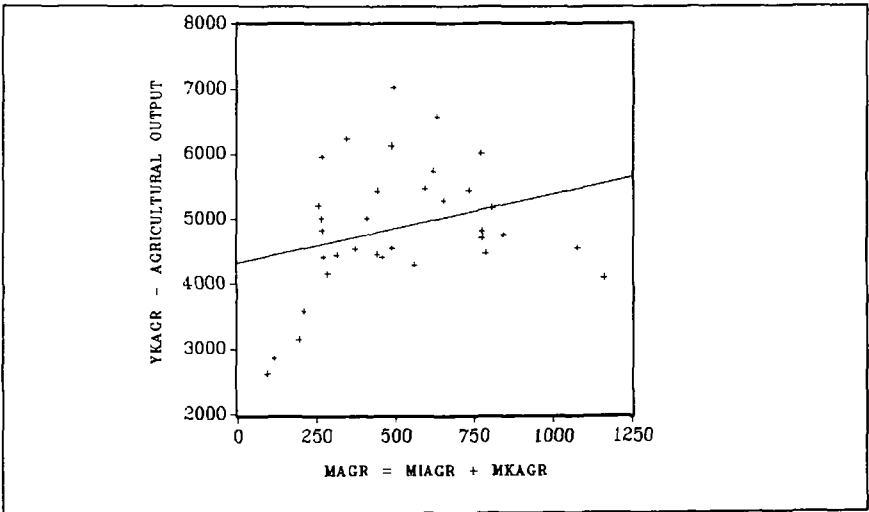


Figure 6.7a
Industrial Output and Industrial Imported Inputs, 1960-93

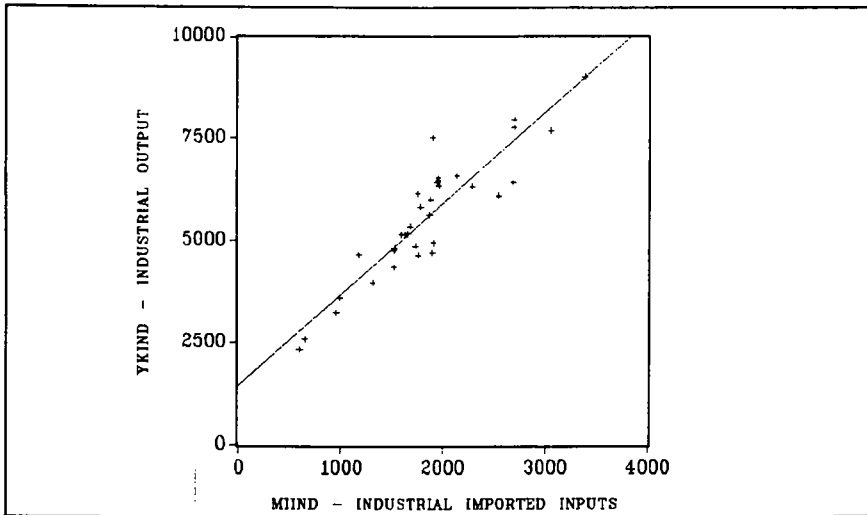
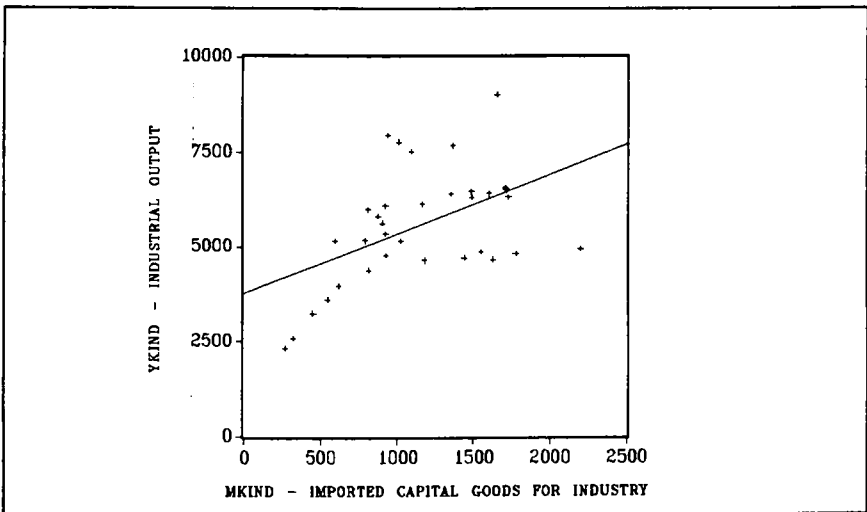


Figure 6.7b
Industrial Output and Capital Goods Imports for Industry, 1960-93



**Table 6.5 Externally-Constrained Investment Demand Function,
1960-93 (dependent variable is IFKP)**

Variable	Model 1		Model 2	
	Regression coefficient	t-stat.	Regression coefficient	t-stat.
Constant	- 503.4	(-1.72)	45.7	(0.13)
MKP 6077	0.35	(4.05)*	0.35	(4.30)*
MKP 7879	0.29	(1.14)	0.37	(1.65)
MKP 8084	0.70	(3.46)*	0.76	(3.84)*
MKP 8589	0.22	(2.70)*	0.20	(2.78)*
MKP 9092	0.20	(3.07)*	0.21	(3.39)*
P_M/P_I	-	-	-483.1	(-3.97)*
IFKP ₋₁	0.68	(6.41)*	0.71	(7.65)*
DUM 7879	-2102.2	(-2.18)*	-2572.9	(-2.96)*
DUM 8084	-3233.3	(-1.87)	-3831.6	(-2.36)*
R^2 (adj)	0.92		0.93	
D.W.	1.88		1.96	
F-stat.	43.9		45.1	

Note: IFKP = fixed investment at constant 1980 cordobas; MKP = import volume at constant 1980 córdobas; period suffix = periods for which slope or intercept dummies were applied; P_M/P_I = relative import price to domestic price of investment goods; DUM = intercept dummy.

* - significant at 5% level.

goods. Although this kind of support continued to dominate for most of the 1985-89 period the import-investment coefficient collapsed, which could be explained by the fact that many aid-financed capital good imports (among others, Russian trucks and tractors) never found their way into real investment projects, some were taken apart for spare parts supplies others are still parked next to the Central Bank headquarters in Managua. Import capacity was boosted in 1990-93, when aid inflows reached unprecedented heights (50% of GNP), but also when fungibility was probably larger than ever. As indicated above, part of the new inflows was used to refinance arrears on outstanding debt (particularly with the World Bank and the IDB) and to boost private consumption.

- (c) Also the link between investment and growth is *not* self-explanatory in the case of Nicaragua. The boost in investment levels during the first half of the 1980s was not accompanied by a strong increase in the growth performance. The marginal productivity of capital strongly declined during the 1980s (see Appendix A6.2 for an econometric analysis) and seems to have turned insignificant in the first half of the 1990s.⁸ This confirms our impression that whatever little recovery there has been in recent years, it has built on existing output capacity with little to no contribution of new investment. Structural adjustment in the form of more efficient productive investment thus still has to take place in Nicaragua.

Summarizing, there is not much empirical evidence in support of the traditional view about the macroeconomic role of aid, in which aid alleviates a foreign exchange constraint on domestic investment, thereby triggering economic growth. Not only has aid failed to systematically raise import capacity in the case of Nicaragua, also the link between import capacity and investment and between investment and growth has become problematic since the 1980s. During the years of export-led growth (1960-77) an enhanced import capacity did support productive investment leading into higher growth. In the 1980s, import dependence initially increased, but the marginal productivity of capital collapsed without signs of recovery in recent years. Explanations of this breakdown of Nicaragua's growth equation are to be found in the civil war, the trade embargo, the technology effects of aid dependence on the socialist

countries and domestic policy failures (Vos, 1994). Medium-term growth models developed for Nicaragua (e.g. Gibson, 1993; and Sanchez Torres and Uribe, 1994) still emphasize the traditional link and thereby seem to miss the point.⁹

The Fiscal Response to Aid Inflows

In the traditional two-gap (as well as in the three-gap) approach, aid is assumed to complement domestic savings (aid will lead to higher income and thereby savings). This has been challenged by Griffin (1970) suggesting aid might displace domestic savings as it may lead to rising recurrent government expenditures (not all is invested) and complacency in the tax effort. Griffin's empirical analysis has been heavily criticized (e.g. White, 1992), but this is not to deny the possibility of a negative relationship between aid and domestic savings. However, the channels through which the two macro variables interact need to be investigated. As aid is generally allocated to the public sector it is logical to disaggregate the savings-investment balance into those for government and private sectors:

$$\text{Private savings gap} + \text{Public savings gap} \equiv \text{Current Account Deficit} \quad (6.8)$$

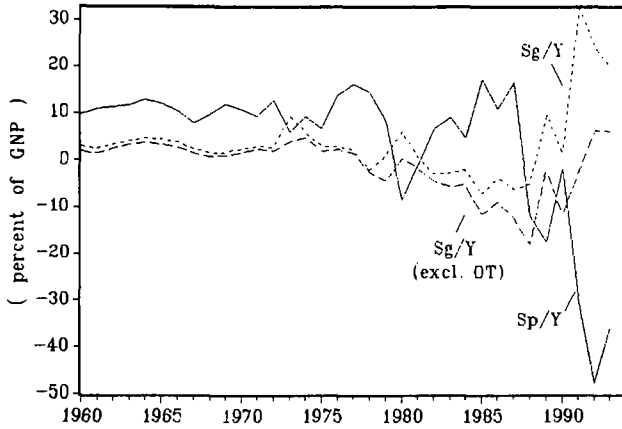
or, in symbols,

$$(I_p - S_p) + (I_g - S_g) = M - X + NFP + OT + PCT \quad (6.9)$$

where S_p and S_g represent gross savings of private and public sector agents respectively; I_p and I_g are private and public investment; and the external balance variables are the same as before.

The sum of private and public savings equals gross *national* savings, i.e. including grants and private transfers from abroad. As we have seen, grants (official transfers) have become quite significant in the case of Nicaragua and therefore strongly influence savings estimates for the 1980s and 1990s. Figure 6.8 shows the trends in private and public savings rates, before and after transfers from abroad. The evidence based on national accounts and public sector data signals a serious decline in private savings in the second year of the hyperinflation (1988) and a free fall since 1991. The most recent decline to negative levels¹⁰ coincides with the consumption boom triggered by the import liberalization and (probably) currency overvaluation.

Figure 6.8
Public and private savings rates, 1960-93
(before transfers from abroad; per cent of GNP)



The fiscal adjustment in recent years has allowed for a recovery of public savings (before official transfers) and their return to positive levels, after having been negative since 1981. The rise in public savings (from -11.6 per cent in 1990 to 6.1 per cent of GNP in 1993) has not been sufficient, however, to compensate for the collapse of private savings. This is evidenced by the fact that gross national savings (even after transfers) have been negative since the late 1980s.

Historically, in the 1960s and 1970s, private savings rates stood at around 11 per cent of GNP and public savings fluctuated around 3-4 percent. During the 1980s, until 1987 the inflation tax worked to push up private savings, but eroded public savings (see Ocampo, 1991; and Vos, 1994). Aid inflows increased during this period, but the question is: did they play a role in the decline of savings? The description of trends and events suggest that, if any, the influence of aid on (public) savings probably has been different from period to period. Aid may affect public savings by raising recurrent expenditures (e.g. counterpart funds used above normal budget) or complacency in the tax effort, but in as far as aid stimulates income growth it may broaden the tax base and raise public savings.

A simple scatterplot analysis suggests aid inflows had a negative impact on public savings, albeit with strong deviations from the presumed trend (Figure 6.9). This is underpinned by an apparent negative impact of aid on government revenue (Figure 6.10) and a positive impact on current public expenditures (Figure 6.11). Such a relationship is also found by Sanchez Torres and Uribe (1994), who apply the Gang-Khan fiscal response model to Nicaragua. Apart from specification problems attached to the Gang-Khan model (see Chapter 2), Sanchez Torres and Uribe fail to take account of the fact that the fiscal response to aid inflows in Nicaragua shows substantial differences from period to period. With so many structural breaks in trends due to the severe external shocks and policy-regime changes, econometric analysis is a risky undertaking.

Estimates of the shifts in the fiscal response are given in Appendix A6.3. Even though this analysis admittedly suffers from important limitations,¹¹ the mere objective here is to

Figure 6.9
Public Savings (excluding grants) and Aid Inflows. 1960-93
(per cent of GNP)

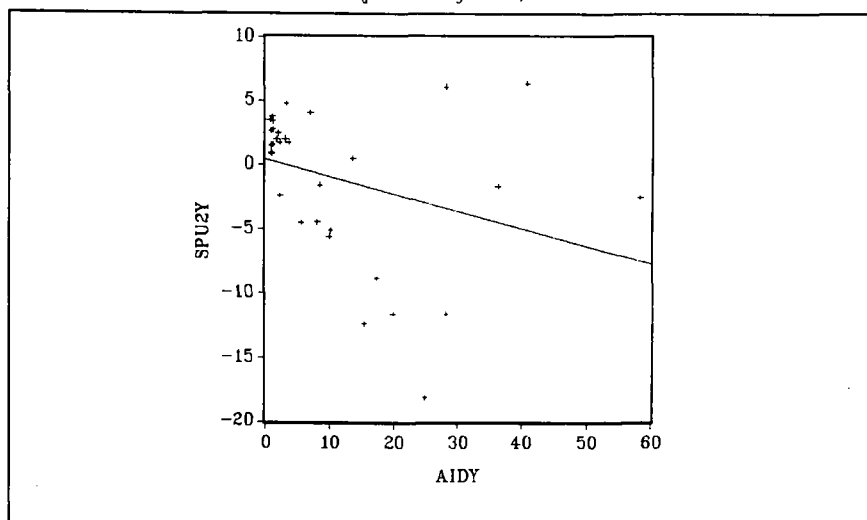


Figure 6.10
Public Sector Revenues (excluding grants) and Aid Inflows, 1960-93
(per cent of GNP)

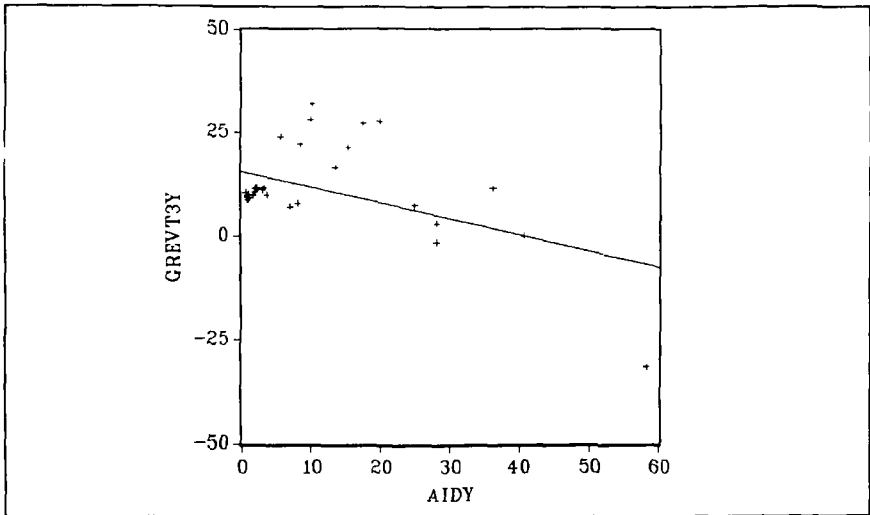
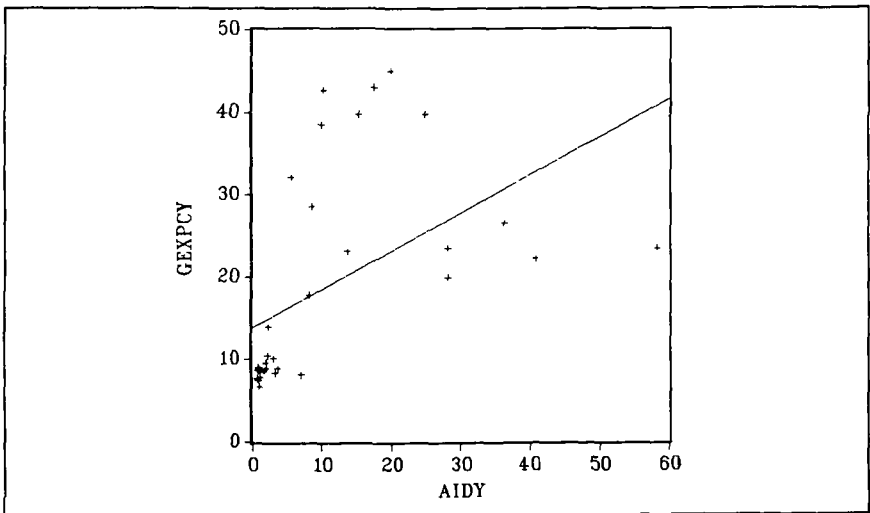


Figure 6.11
Current Public Expenditures and Aid Flows, 1960-93
(per cent of GNP)



confirm our hypothesis that the fiscal response indeed has been different under the different policy regimes Nicaragua has witnessed since 1960.

The aid-public savings relationship is analyzed through a functional form in which the public savings depend on GNP growth (source of tax base), aid inflows (grants plus concessional lending) and the inflation rate (Olivera-Tanzi effect). Public savings refer to the current revenue (excluding grants) less current expenditures of the non-financial public sector. The results show that:

- (a) Aid inflows had a weak, but positive impact on public savings between 1960 and 1977, but the relationship turned negative during the 1980s, particularly during 1985-89 (Table A6.4). In the 1990s, there is no longer a significant relationship between aid inflows, a result of ambiguous effects of the adjustment policies conducted since 1991 (see below). There does not seem to be a major difference when analyzing the effects of grants and concessional lending on public savings (see columns 2 and 3 of Table A6.4), but as indicated below the type of aid inflow does have a distinguishable effect on public revenue and current expenditures.
- (b) Public sector revenue is positively related to GNP growth, while aid inflows generally have had a rather ambiguous impact (Table A6.5). In the 1960s and 1970s the effect of aid inflows on public sector revenue was not significantly different from zero. In the first years of the revolution (1980-84), the tax effort improved (see Vos, 1994) and complemented the influx of foreign assistance. In contrast, during the years of hyperinflation (1985-89), the tax basis eroded rapidly as price increases ran well ahead of the collection of taxes (the Olivera-Tanzi effect). Inflation, in turn, was partly a result of the monetization of the aid inflows, among others in the form of subsidies on commodities imported through aid programmes.¹² Fiscal adjustment efforts in the 1990s have mainly fallen on the expenditure side. Policy conditionality attached to aid inflows has not been effective to eliminate the negative impact on government revenue, even though the negative link has become weaker compared to the late 1980s.

These effects relate strongest to the impact of grant aid. Assistance in the form of loans also shows a negative impact on the tax effort in the 1990s, which can be attributed to the highly liquid and fungible nature of the aid in this period. During the 1980s, however, concessional lending appears to have had a positive impact on public sector revenue, an effect which could be partly explained by the support provided in the form of soft loans to public enterprises.

- (c) Aid inflows tend to push up current spending of the government and non-financial public enterprises, but this effect seems to have been considerably stronger in the 1980s than in the 1970s or the 1990s (Table A6.6). In the 1960s and 1970s, aid flows were probably too small to exhibit a visible effect on public spending, while in the 1990s fiscal retrenchment has halted the expansionary effect of aid. Yet, as shown in Appendix Table A6.6, also during 1990-93 aid inflows have pushed up current spending by 21 cents out of each additional dollar of aid.

As indicated, in the 1980s, aid inflows directly (debt servicing, maintenance costs, military spending) and indirectly (subsidies on aid-funded commodity imports) stimulated current expenditures. Again, these effects are stronger for grant aid than for loans, but both sources seem to have worked in the same direction. During 1990-93, however, concessional lending has not had a significant impact on current government spending.

Aggregate investment peaked in the mid 1970s (in part a response to the reconstruction needs after the 1972 earthquake), collapsed towards the end of the decade because of the civil strife and recovered during the 1980s. Under the Sandinistas, investment recovered largely through a boost in public investment following the nationalization of Somoza's properties and government policies geared at improving physical and social infrastructure. Private investment recovered as well in the first years of the revolution (Figure 6.12), mainly in peasant agriculture. Import constraints, labour supply constraints and the increasing intensity of the civil war led to a further fall in private investment in the mid-1980s, while also public investment started to decline with the emerging fiscal problems. The Sandinista government made an explicit decision

Figure 6.12
Public and private investment rates. 1960-93
(per cent of GNP)

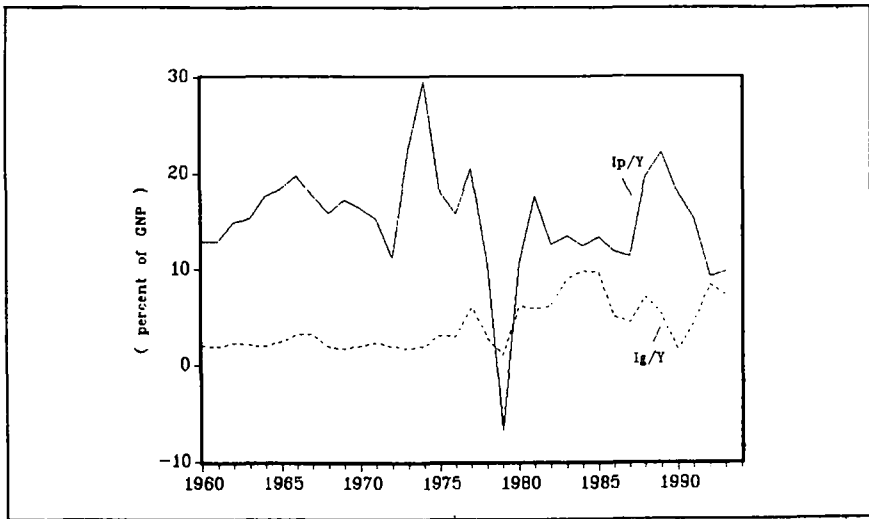
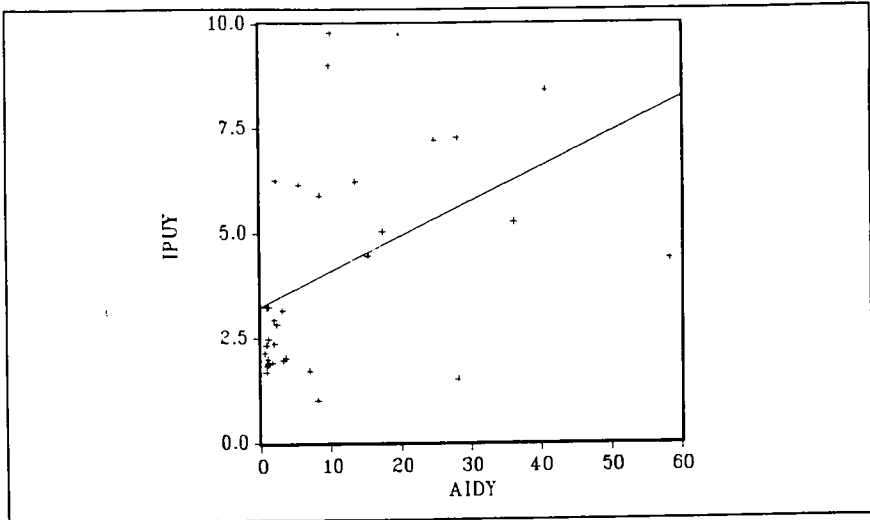


Figure 6.13
Public Investment and Aid Flows, 1960-93
(per cent of GNP)



to pay for the war out of investment funds in order to minimize the impact on current transfers (food subsidies, etc.) in an attempt to defend the 'social wage' (Gibson, 1994). Private investment rises in the final part of the 1980s, but this finding is probably partly due to measurement problems in the national accounts. (The combination of hyperinflation, overvalued and multiple exchange rates cause a good deal of distortion in the national accounts for these years, with investment - particularly also commodity stocks - likely being grossly overestimated in these years.) The fall in public investment lasted until 1990, after which it recovers from 1.5 per cent of GNP in 1990 to 8.4 per cent in 1992, but declining again to 7.3 per cent in 1993. The public investment rate of recent years is somewhat below that of the mid-1980s, but well above levels under the Somoza government in the 1960s and 1970s when they stood at 2-3 percent.

Public investment tends to increase with aid inflows (both grants and loans), since the 1980s (Table A6.7). In the 1960s and 1970s, public investment was hardly affected by development assistance. The public investment boom of 1980-84 is shown to have been strongly stimulated by foreign capital inflows (though with a marginal propensity of substantially less than unity, i.e. 0.35), but the link weakens thereafter, also during 1990-93 when public investment recovered. As assessed above, a substantial part of aid was not tied to investment projects, but rather to structural adjustment policy conditions and debt repayment. Nevertheless, aid financed most of the recovery of public investment since 1990 (see Figure 6.12). Because much went into other purposes, the *total* amount of aid bears little relationship the public investment level.

This finding also has consequences for private investment. Existing studies provide no conclusive evidence about whether public investment stimulates ('crowds in') or discourages ('crowds out') private investment in Nicaragua. The former effect is usually expected to occur when bottlenecks in social and physical infrastructure form a major constraint on production, such that public investment in such activities will form an important incentive for private investors. If, however, on the other hand, financial constraints are tight, enhanced public sector activity could lead to government claims on domestic and foreign finance resources which crowd out those available for private investors. Taylor (1993) and Gibson (1993) assume, in a three

gap model framework, that there is 'crowding in', while - in a combined fiscal response-three gap model - Sanchez Torres and Uribe (1994) find a predominant 'crowding out' effect. Our own investigation tends to agree with Taylor and Gibson that public investment plays an important role in encouraging private investment in Nicaragua. In a more elaborate externally constrained accelerator model it is found that the private sector response to public investment is significant, but showing a two- to three-year time lag (which is longer than usually assumed) and a marginal response coefficient of about 0.5 (which is similar to the one assumed by Taylor and Gibson, although the observed time lag is longer according to our results).¹³ If these results based on past experience still have relevance, we should expect that private investment might recover in 1994-6, following the increase in public investment in 1991-93.

Similar to the relationships between aid and imports and import capacity and growth, also the quantitative analysis of the fiscal response to aid inflows is hampered by the great number of structural breaks in the trends. These breaks could be clearly identified in the above analysis and goes in support of the political economy analyses of section 6.2. This is probably useful as historical analysis, but what is the relevance of these findings for present policy-making?

They are at least useful in a negative sense: the rather paradoxical conclusion of the econometric investigation is that econometric models for policy analysis building long-run relationships are probably of little use for policy making. That is, if no account is made of the structural shifts in the relationships, such models should be considered to be of little help.

Further, the findings relating to the fiscal response to aid inflows were built on a partial equilibrium approach, which has important limitations for omitting interaction effects - see White (1994) for a discussion of the importance of such effects. The structural shifts in the key macroeconomic adjustment mechanisms are not easily handled in a simultaneous equation system, so we have limited ourselves to the exploratory data analysis in the above. The results do fit the political economy analysis rather well, however. From that angle we could conclude that:

- due to its small magnitude, aid had little effect on fiscal aggregates in the 1960s and 1970s;
- during the 1980s, aid was initially allocated in fair amounts to public investment projects, but became increasingly fungible thereafter, despite the heavy tying status of most of the aid originating from the former socialist countries. That is, aid had a negative impact on government revenue and raised public spending. The poor adaptation of the aid-financed capital good imports to Nicaragua's economic conditions and the economic and political turmoil of the second half of the 1980s contributed to the observed fiscal response effects.
- severe fiscal adjustment in the 1990s has reduced the degree of aid fungibility, although it is still there. The stimulus on public and private investment from aid fell to a minimum during 1990-93, despite a recovery in the public investment rates. The observed lag (two or three years) in the response of private investors to improved infrastructure could give rise to expecting a recovery of private investment in the coming years. However, as long as the strict monetary and fiscal policies severely restrict domestic credit supplies, the immediate binding constraint on private investment may be financial rather than a lack of infrastructure. Aid flows have only to a small extent been tied to investment projects. Nevertheless, a significant share of the public investment programme is dependent on external financing, which is in part the result of the macroeconomic policy conditionality attached to the aid and which has imposed strict fiscal targets and left no scope for domestic financing of fiscal deficits. Since, much of the total aid inflow has been used for debt reduction, debt servicing and strengthening of international reserves, the link between total aid and public investment is not very strong. Aid served essentially to stabilize the economy, but - so far - failed to contribute to growth.
- public investments are important in encouraging private investment, albeit with substantial lags, and hence economic growth. This result merely reconfirms the

impression that a drive towards a fully market-based incentive scheme and economic stability are not sufficient conditions for economic recovery.

6.6 Conclusions and Policy Recommendations

- (1) Undoubtedly, aid has come to play a crucial role in determining the macroeconomic balances of the Nicaraguan economy. Its precise role, however, has changed during the past decade and a half due to a number of related factors, which are the changing nature and source of aid inflows, a changing external environment, a change in political regime and a change in economic management. Due to these changes it is difficult to build on an analysis of long-term trends to assess aid's macroeconomic impact. Rather, the structural parameters of the economy have to be assessed from period to period.
- (2) The relationships between aid, import capacity, investment and growth are complex ones in the case of Nicaragua. Import capacity has not immediately been fostered by aid inflows, essentially because much of aid went into servicing of outstanding debt.
- (3) Aid and exports are negatively correlated. Yet, it is difficult to argue that this is a typical 'Dutch disease' phenomenon in the case of Nicaragua: export performance has principally been determined by major supply constraints related to the civil strife (infrastructure and labour constraints) and external factors (trade embargo, declining world markets). Further, the observed price elasticity of export supplies is low, implying that - likely - the real exchange rate only weakly affects export performance.
- (4) Aid has been fungible in Nicaragua, in the sense that it has displaced non-grant public sector savings by exercising a negative influence on the tax collection and leading to higher current expenditures. The experience of the 1990s shows, however, that one way to contain fungibility is to have a strong macroeconomic policy framework in place with well defined fiscal targets.

(5) Public investment has recovered somewhat during the 1990s after a steep fall in the late 1980s. The stabilization policies conducted by the Sandinista government, firstly, to finance the war economy and, subsequently, to contain the hyperinflation went (explicitly) to the detriment of public investment. Aid inflows in the 1990s have permitted some recovery of public investment. Public investment tends to influence private investment positively in Nicaragua, though with some time lag. This could give some reason for optimism about a possible economic recovery in the coming years.

However, the dependence of public investment rates on aid inflows should also be a reason for some concern. Although Nicaragua has been reasonably successful in securing external resources in the initial stages of the process of transformation towards a liberalized market economy, it is only realistic to expect aid flows to decrease in the future. Given the current financial constraints, this tendency is alarming. In the current situation, public finances are fully dependent on external support. A number of investment programmes, such as the social investment fund (FISE), are 100 per cent aid financed. There may be not enough flexibility in the budget to keep up public investment if aid inflows go down.

(6) Another major point of concern is the sustainability of macroeconomic stability. Aid inflows and the adjustment policies have successfully contained hyperinflation and reduced fiscal imbalances. Further, major steps have been taken to install a market-based economy (trade liberalization, financial sector reform). Yet, inflation and inflationary expectations have been contained to an important extent by using the *córdoba* as a nominal anchor. Many basic prices and financial variables are pegged to the dollar exchange rate. With the poor export performance and high debt servicing obligations, foreign financing is the key to sustain the exchange rate. A decline in aid inflows will almost certainly undermine the current economic stability by weakening the *córdoba* and offset a new inflationary spiral.

(7) Improving supply conditions is the long-term solution to ensure greater economic stability also in the absence of aid. The supply problems will, however, take time to be resolved. Agriculture is the mainstay of the economy and is likely to remain so. The structural problems

affecting the sector are (Vos, 1994): (a) infrastructural deficiencies, (b) ill-functioning distribution systems, (c) lack of access to credits by many farmers, and (d) property rights conflicts. All these four issues are broadly recognized, but the latter two seem the most disputed. Specifying these problems in detail is beyond the scope of this study, but on the credit system and the property rights issue, we are inclined to conclude the following.

The issue of property rights is on the political agenda, but has a long history dating back to the Somoza years and deficiencies in the land reform programmes of the Sandinista government. However, it seems the issue is at the same time handled too easily as *the* explanation for sluggish private investment. This position clearly exaggerates the problem. Under the present government, previous owners (including the Somoza family) have started to reclaim properties, creating an atmosphere of uncertainty and obviously affecting the investment climate. The government has responded that, in principle, property confiscated by the Sandinistas will be returned or paid for. It is difficult to estimate the precise importance of the property rights issue. Primitive and inadequate cadastral records are a problem, but this also has been a problem in the past. It would seem that the claims on old properties have more to do with a demand for compensation for confiscation in the past, than with confidence in the new regime regarding protection of private property in the future. In this sense, the issue should not be overrated. It is important to improve legislation and property administration, but it will not be the *deus ex machina* to stimulate private investment. Moreover, fiscal problems could emerge if the government were to meet all compensation claims. The government plans to repay the related bond issues from the privatization programme, but this programme so far has provided a negative rather than a positive revenue (Gibson, 1994). Bond-financed full compensation of properties confiscated in the 1980s could thus create a sizeable domestic public debt burden leading to enlarged fiscal deficits.

Financial sector reform has come a long way, but the new institutional framework and restrictions on credit expansion by the state-owned banks have so far not proven conducive of resolving credit constraints of the agricultural sector. Efficiency-based credit allocation schemes at market interest rates are needed to complement the private banking system. These may be

run through the state-owned development banks or, may be preferably, through new specialized credit institutions.

The macroeconomic framework of policy conditionality should extend to include targets for tackling these supply constraints.

(8) Programme versus project aid? Programme aid in the form of balance of payments support played a central role in the stabilization programme implemented by the Chamorro government. Policy conditionality is central to the programme aid. For this to work, a good amount of consensus regarding the nature of the economic programme. So far, the basic framework for macroeconomic policy conditionality has been provided through IMF agreements. Consensus building has not been easy as the difficult discussions show which have taken place since early 1993 around the conditionality attached to the Enhanced Structural Adjustment Facility (ESAF) loan. It would be tempting to plea for more project aid, instead of programme aid, as such assistance might be easier to isolate from the political debate and policy debates around the right structural adjustment policy framework. Project aid will directly influence the resource allocation process, which may be more effective to reach specific targets. However, it also raises the danger of fungibility and creation of macroeconomic distortions if the project fails to fit a tough macroeconomic framework and if there is weak donor coordination.

Probably the ideal situation would be to have a well-defined macroeconomic policy framework with clear sectoral targets that can deal with the indicated structural supply constraints. For the latter more government action influencing incentive schemes (e.g. in the form of the supply of physical and social infrastructure and credit allocation mechanisms) is needed than the conventional IMF structural adjustment programme is usually willing to accept. With such a framework in place, programme should be as good as project aid.

Notes to Chapter 6

1. See White (1992 and 1994) for extensive reviews of the literature on the macroeconomics of aid.
2. Comprising official transfers and net concessional long-term lending.
3. Table A6.3 shows a negative correlation coefficient (-0.98), but since in the accounting definition of the import capacity decomposition analysis debt servicing has a negative sign, a negative correlation coefficient means that aid inflows and debt service payments move up together.
4. This unlike the usually rather straightforward modelling of these relationships in existing macroeconomic models, such as those presented by Gibson (1993) and Sanchez-Torres and Uribe (1994).
5. Also when looking at the different periods in Nicaraguan economic development, no significant relationship is found.
6. See FitzGerald, Jansen and Vos (1994) for the elaboration of this investment model. It departs from the simple accelerator model, but after inclusion of external variables (exports, foreign financing) and public finance variables, shows how investment demand may be fully determined by external variables and previous investment decisions. Under certain conditions, the model can be reduced to the specification applied in Table 6.5.
7. As shown in Table 6.5, inclusion of a price variable (the relative price of imports vis-à-vis the domestic price of capital goods, which is significant, the estimates for the marginal import-investment propensity remain by and large the same.
8. These variations in the productivity of investment are not captured by existing models for the Nicaraguan economy. Three-gap models do not capture the changes in the relationship between the growth and the capital stock and output growth, but different versions do indicate that there might be a wide range: Gibson (1993) and Taylor (1993: Chapter 2) use a marginal productivity of capital of 0.25 (consistent with our estimate for 1960-77, but not for the more recent period), while Sanchez-Torres and Uribe (1994) assume it is 0.77. As indicated in the text, supply conditions as well as the quality of capital investment have changed over time in Nicaragua and have to be accounted for. In addition, it seems difficult to establish the productivity of capital through partial equilibrium analysis as done in the text and in the cited studies, as many constraints have been binding simultaneously in Nicaragua, affecting the growth-investment relationship. Although the Three-Gap Models provide a wider framework the relevant coefficients were obtained either as 'guesstimates' or through partial analysis.

9. This holds for Gibson's three-gap model (adapted from Bacha 1990 and Taylor 1990), but not for his analysis of economic and political events.
10. Note that private savings have been derived as a residual from the national accounts estimate of gross national savings and public sector savings as obtained from public sector data.
11. To mention one: analysis is only of a partial equilibrium nature, ignoring simultaneous determination of various variables, as well as general equilibrium effects.
12. Note that in Table A3.5 the inflation variable has a small, but positive impact on public sector revenue. However, this holds for the period as a whole. Analysis by periods, suggests a negative relationship between the inflation rate and tax revenue for 1985-89.
13. The relation found for the private investment rate (1960-93) is:

$$\begin{aligned}
 \frac{I_p}{Y} = & \frac{0.36}{(2.04)} g_y + \frac{0.48}{(3.11)} \left(\frac{I_g}{Y} \right)_{-2} + \frac{0.29}{(5.16)} \left(\frac{M}{Y} \right)_{60-77} + \frac{0.18}{(4.40)} \left(\frac{M}{Y} \right)_{78-79} \\
 & + \frac{0.22}{(7.18)} \left(\frac{M}{Y} \right)_{80-84} + \frac{0.23}{(12.90)} \left(\frac{M}{Y} \right)_{85-89} + \frac{0.13}{(4.83)} \left(\frac{M}{Y} \right)_{90-93} + \frac{0.29}{(3.67)} \left(\frac{I_p}{Y} \right)_{-1} \\
 & - \frac{-3.67}{(-5.04)} D72 + \frac{4.73}{(5.25)} D73 - \frac{8.29}{(-2.08)} D79 + \frac{4.72}{(2.13)} D88 \\
 \bar{R}^2 = & 0.88 \quad D.W. = 2.11 \quad F = 22.2
 \end{aligned}$$

where I_p is private investment, Y is GNP, g_y is GNP growth, I_g is public investment, M is imports (with the subscripts indicating that the periods to which slope dummies were applied) and $D72$, $D73$, $D79$, and $D88$ are *intercept dummies* capturing respectively shocks in private investment demand due to the earthquake (1972), the reconstruction thereafter (1973), the Sandinista revolution (1979) and the peak in hyperinflation and political uncertainty (1988). T-statistics are in parentheses. All coefficients are significant at the 5 percent level.

Estimating the same equation for a one-year time lag for public investment gives a

lower coefficient (about 0.3), which significant only at the 10 percent level of confidence.

Unit root tests for the private investment rate suggests the series is stationary.

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Appendix A6.1 Decomposition of Import Capacity

In the text the accounting identity for import capacity was given as (equation 6.7):

$$P_m M_v = P_x X_v + NFP + PCT + AID + \Delta FL_{oth} + \Delta FS + OKI + \Delta R \quad (A.6.1)$$

where all variables represent dollar values at current prices and where imports and exports now specify volumes (M_v , X_v) times their respective dollar prices (P_m , P_x). Disaggregating aid again between official transfers and concessional lending and specifying long-term capital flows (ΔFL) in gross terms and incorporating interest payments and amortizations in three new variable debt servicing of payment obligations that are due (DS), payment arrears (ARR) and rescheduled payments (RSC) we can rewrite equation A6.1 as:

$$P_m M_v = P_x X_v + PCT + (OT + \Delta FL_c) + \Delta FL_{nc} + OKI - (DS - ARR - RSC) + \Delta R \quad (A.6.2)$$

where other capital inflows (OKI) include short-term flows and in 'net' terms, as before. Factor payments related to other capital have been incorporated in the private transfer item (PCT).

Real import capacity can now be defined by deflating both sides of equation A6.2 by the import deflator:

$$M_v = \frac{P_x}{P_m} X_v + \frac{PCT + (OT + \Delta FL_c) + \Delta FL_{nc} + OKI - (DS - ARR - RSC) + \Delta R}{P_m} \quad (A.6.3)$$

Clearly, the real import capacity is accounted for by are accounted for (without implying a necessary causation) by the following factors:

- the terms of trade (P_x/P_m)
- the export volume (X_v)
- the unit price of imports (P_m)
- private transfers and factor payments on OKI (PCT)
- aid inflows ($OT + \Delta FL_c$)
- non-concessional long-term lending (ΔFL_{nc})
- other net capital inflows (OKI)
- debt servicing due on long term debt (DS)
- payment arrears (ARR)
- rescheduled debt service payments (RSC)
- change in reserves (ΔR)

Changes in the real import capacity can be obtained by taking first differences, which gives:

$$\begin{aligned}
 \Delta M_v &= \Delta \left(\frac{P_x}{P_m} \right) \cdot X_v + \Delta X \cdot \left(\frac{P_x}{P_m} \right) \\
 &+ \Delta \left(\frac{1}{P_m} \right) \cdot (PCT + OT + \Delta FL_c + \Delta FL_{nc} + OKI - DS + ARR + RSC + \Delta R) \\
 &+ \left(\frac{1}{P_m} \right) \cdot (\Delta PCT + \Delta OT + \Delta (\Delta FL_c) + \Delta (\Delta FL_{nc}) + \Delta OKI - \Delta DS + \Delta ARR + \Delta RSC + \Delta (\Delta R)) \\
 &+ \text{interaction effects}
 \end{aligned}
 \tag{A.6.4}$$

where we have on the right hand side:

- terms of trade and export volume effects
- import price effects on net non-export earnings and external financing
- changes in real net non-export earnings and external financing

In Table 6.3, the import price effects on non-export earnings and external financing are referred to as $\Delta(1/P_m)$.

Table A.6.1 Correlation Matrix of Import Capacity Determinants, 1971-93

	ΔM	ΔAID	ΔOT	$\Delta(\Delta FL_c)$	ΔX	$\Delta(\Delta FL_n)$	ΔDS	ΔOKI	$\Delta(\Delta R)$
ΔM	1.00								
ΔAID	0.23	1.00							
ΔOT	0.12	0.80	1.00						
$\Delta(\Delta FL_c)$	0.14	0.19	-0.44	1.00					
ΔX	-0.21	-0.35	-0.22	-0.17	1.00				
$\Delta(\Delta FL_{oth})$	0.24	0.63	0.89	-0.49	-0.18	1.00			
ΔDS	-0.17	-0.78	-0.95	0.39	0.10	-0.87	1.00		
ΔOKI	0.59	0.17	0.20	-0.07	-0.37	0.17	-0.19	1.00	
$\Delta(\Delta R)$	-0.01	-0.26	-0.35	0.08	-0.15	-0.10	0.14	-0.36	1.00

Table A.6.2 Correlation Matrix of Import Capacity Determinants, 1971-83

	ΔM	ΔAID	ΔOT	$\Delta(\Delta FL_c)$	ΔX	$\Delta(\Delta FL_n)$	ΔDS	ΔOKI	$\Delta(\Delta R)$
ΔM	1.00								
ΔAID	0.24	1.00							
ΔOT	-0.05	0.86	1.00						
$\Delta(\Delta FL_c)$	0.55	0.66	0.20	1.00					
ΔX	-0.12	-0.67	-0.58	-0.44	1.00				
$\Delta(\Delta FL_{oth})$	0.45	0.00	0.11	-0.17	-0.24	1.00			
ΔDS	-0.41	-0.44	-0.09	-0.72	0.11	0.29	1.00		
ΔOKI	0.49	0.38	0.06	0.67	-0.47	-0.00	-0.33	1.00	
$\Delta(\Delta R)$	0.23	-0.39	-0.54	0.05	0.17	0.01	0.04	-0.15	1.00

Table A.6.3 Correlation Matrix of Import Capacity Determinants, 1980-93

	ΔM	ΔAID	ΔOT	$\Delta(\Delta FL_c)$	ΔX	$\Delta(\Delta FL_n)$	ΔDS	ΔOKI	$\Delta(\Delta R)$
ΔM	1.00								
ΔAID	0.35	1.00							
ΔOT	0.21	0.79	1.00						
$\Delta(\Delta FL_c)$	0.16	0.19	-0.45	1.00					
ΔX	-0.40	-0.32	-0.21	-0.17	1.00				
$\Delta(\Delta FL_{oth})$	0.18	0.65	0.89	-0.49	-0.17	1.00			
ΔDS	-0.23	-0.81	-0.98	0.39	0.16	-0.89	1.00		
ΔOKI	0.86	0.16	0.20	-0.08	-0.39	0.16	-0.18	1.00	
$\Delta(\Delta R)$	-0.68	-0.27	-0.29	0.07	-0.15	-0.16	0.24	-0.59	1.00

Appendix A.6.2 The Link between Investment and Growth

The link between investment and output growth can be analyzed, starting from a traditional exogenous growth model, which can be set up from a standard production function:

$$Y_t = A_t \cdot f(K_t, L_t)$$

where Y_t is output at time t , K_t is the capital stock at time t , L_t is the labour force (or population) at time t , and A_t is a constant which could reflect the level of technology. With constant returns to scale output per capita ($y_t = Y_t/L_t$) can be written as:

$$y_t = A_t \cdot k_t^\alpha$$

where k_t is the capital-labour ratio. Neo-classical growth models typically focus on the long-run ('steady state') with output growth and the capital stock reflecting desired levels. Following common practice in empirical investigations of *endogenous* growth models (e.g. Roubini & Sala-i-Martin, 1992; and King & Levine, 1992), we assume that due to adjustment costs and other imperfections actual levels deviate from desired levels and specify a type of stock-adjustment equation. Taking logarithms and first differences the stock adjustment process with respect to GDP per capita growth rate (approximated by the first difference of the log of GDP per capita) can be specified as:

$$\Delta \Delta \ln y_t = \beta_1 \cdot (\Delta \ln y_t^* - \Delta \ln y_{t-1})$$

where $\Delta \ln y_t^*$ is the desired growth of GDP per capita. If the desired growth rate of GDP per capita is related to the growth of the (desired) capital stock per capita (Δk), the actual growth rate of output can be derived as:

$$\Delta \Delta \ln y_t = \beta_1 [\beta_2 (\Delta \ln \Delta K_t - \Delta \ln \Delta L_t) - \Delta \ln y_{t-1}]$$

so that

$$\Delta \ln y_t = \beta_1 \beta_2 (\Delta \ln \Delta K_t - \Delta \ln \Delta L_t) + (1 - \beta_2) \Delta \ln y_{t-1}$$

where ΔK is the change in the (desired) capital, or the level of (fixed) investment.

Applying this model to data for Nicaragua for 1960-93 gave the following result:

$$\begin{aligned}\Delta \ln y = & -\frac{0.24}{(-1.99)} + \frac{0.26}{(5.74)} \Delta \ln IF_{1960-77} + \frac{0.21}{(4.57)} \Delta \ln IF_{1978-89} \\ & + \frac{0.06}{(2.36)} \Delta \ln IF_{1980-89} + \frac{0.02}{(1.63)} \Delta \ln IF_{1990-94} - \frac{2.79}{(-3.30)} \ln \Delta L + \frac{0.03}{(2.86)} \ln y_{-1}\end{aligned}$$

$$\tilde{R}^2 = 0.90 \quad D.W. = 2.30 \quad F = 40.2$$

with t-statistics in parentheses: all coefficients are significant at 5 percent level, except investment variable for 1990-93 period. Suffixes to fixed investment variable (*IF*) indicate slope dummies were applied for the indicated periods.

Appendix A.6.3 Fiscal Response to Aid: Some Econometric Evidence
Table A6.4 Public Savings¹ and Aid, 1960-93

Dependent variable = S_g/Y	Total aid	Grants	Loans
Constant	0.07 (0.07)	0.03 (0.03)	-0.60 (-0.52)
GNP growth	0.25* (2.93)	0.21** (2.43)	0.31* (3.06)
AID/Y 1960-77	0.43** (2.93)	0.69*** (1.97)	0.86** (2.04)
AID/Y 1978-79	0.21 (0.50)	0.20 (0.34)	1.23 (0.84)
AID/Y 1980-84	-0.36*** (-1.77)	-0.86 (-1.34)	-0.50** (-1.89)
AID/Y 1985-89	-0.62* (-6.55)	-1.49* (-4.41)	-0.75* (5.49)
AID/Y 1990-94	0.05 (0.57)	0.03 (0.34)	0.34* (3.82)
Inflation	0.02* (7.89)	0.01* (4.30)	0.02* (5.67)
Intercept dummies:			
1977	-1.38* (-6.08)	-	-
1990	-12.94* (-5.82)	-11.97* (-8.22)	-16.15* (-10.9)
R^2_{adj}	.81	.76	.83
D.W.	1.81	1.48	1.80
F-stat.	15.98	13.42	18.60
n	33	33	33

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

1. Public savings refers to savings of consolidated non-financial public sector, excluding grants.

Table A.6.5 Public Sector Current Revenue¹ and Aid, 1960-93

Dependent variable = T/Y	Total aid	Grants	Loans ²
Constant	8.84 (1.60)	7.08* (5.77)	9.46* (7.06)
GNP growth	0.21** (2.52)	0.53** (3.08)	0.38* (3.52)
AID/Y 1960-77	-0.55 (-1.30)	-0.79 (-1.37)	-0.58 (-0.74)
AID/Y 1980-84	0.91* (3.73)	5.23* (5.33)	2.48* (7.30)
AID/Y 1985-89	-0.83* (-2.84)	-2.47* (-15.5)	1.04* (2.59)
AID/Y 1990-94	-0.01 (-0.15)	-0.14** (-2.14)	-0.45* (-3.87)
Inflation	0.02* (3.99)	0.01* (3.28)	-0.02*** (-1.79)
Intercept dummies:			
1985-89	2.41* (2.85)	3.18* (11.4)	-
R ² _{adj}	.86	.82	.73
D.W.	1.90	1.84	2.06
F-stat.	23.67	20.85	11.22
n	33	33	24

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level

1. Government Current Revenue, excluding grants; and 2. Refers to 1970-93.

Table A.6.6 Public Sector Current Expenditures and Aid, 1970-93

Dependent variable = G/Y	Total aid	Grants	Loans
constant	13.11* (7.02)	12.29* (8.54)	17.99* (3.82)
AID/Y 1970-77	-1.07*** (-1.82)	-1.18*** (-1.79)	-4.57*** (-1.82)
AID/Y 1978-79	0.57*** (2.08)	1.01* (3.70)	-0.79 (-0.35)
AID/Y 1980-84	2.60* (7.94)	9.08* (11.11)	2.90* (3.29)
AID/Y 1985-89	1.78* (10.69)	6.37* (10.82)	2.03* (5.51)
AID/Y 1990-94	0.21* (4.03)	0.30* (3.11)	0.27 (0.90)
Inflation	-0.06* (-9.45)	-0.07* (-9.64)	-0.05* (-6.16)
R ² _{adj}	.94	.91	.89
D.W.	2.38	2.38	2.10
F-stat.	39.15	30.79	24.50
n	24	24	24

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

Table A.6.7 Public Investment and Aid, 1960-93

Dependent variable = I_g/Y	Total aid	Grants	Loans
Constant	0.92* (3.29)	0.75* (2.65)	1.39* (5.92)
AID/Y 1960-77	0.04 (0.35)	-0.03 (-0.32)	0.06 (0.43)
AID/Y 1978-79	-0.22* (-3.59)	-0.33* (-5.84)	-0.55* (-5.54)
AID/Y 1980-84	0.35* (7.64)	0.86* (6.61)	0.61* (8.13)
AID/Y 1985-89	0.15* (7.75)	0.26* (5.53)	0.31* (8.25)
AID/Y 1990-94	0.07* (2.58)	0.07* (2.38)	0.26* (14.61)
Inflation	-0.01* (-12.87)	-0.004* (-8.52)	-0.01* (-9.82)
$(I_g/Y)_{-1}$	0.56* (8.60)	0.70* (8.57)	0.38* (6.17)
Intercept dummies:			
1977	3.59* (21.69)	3.46* (14.37)	3.62* (17.86)
1986	-3.92* (-11.58)	-3.80* (-6.29)	-3.81* (-12.92)
1990	-4.30* (-6.03)	-3.84* (-6.77)	-5.89* (-32.44)
R^2_{adj}	.89	.83	.94
D.W.	2.36	2.38	1.57
F-stat.	26.68	17.01	50.41
n	33	33	33

Notes: AID variable refers to total ODA (grants *plus* concessional lending) in first column, to grants only in second column and to concessional loans only in third column. t-statistics are in parentheses: * confident at 1% level; ** confident at 5% level; *** confident at 10% level.

CHAPTER 7

IMPORTS, INVESTMENT AND AID IN TANZANIA

by Joshua Doriye, Howard White and Marc Wuyts

7.1 Introduction

Tanzania occupies a special position in the debate about aid effectiveness. By the mid seventies the government was increasingly popular for its imaginative pursuit of policies for egalitarian growth. But a mere few years later it had become the graveyard for the ideals of many aid projects. In a more recent reversal the country can be held up as one of the success stories of policy reform in Africa. In this chapter we examine aid's role in Tanzania's unstable economic development.

Part 7.2 provides an overview of aid flows to the country since 1970, and these flows are analysed in the accounting framework in Part 7.3. Part 7.4 turns to an analysis of the macroeconomic impact of both aid monies and aid-supported policies. Part 7.5 concludes.

7.2 Capital inflows to Tanzania

Figure 7.1 shows the real value of total Tanzanian net receipts (disbursements minus amortization) of foreign capital for the period 1970-1991.¹ Two main features stand out from this figure: (i) the predominance of ODA in total flows; and (ii) the existence of two aid booms, the first peaking in 1980 and the second starting in 1986 and as yet unfinished.

The non-ODA inflows in the 1970s were non-concessional funds from bilaterals and the hard-loan windows of the World Bank and, to a lesser extent, the African Development Bank.

Despite the fact that such borrowings are no longer made,² the non-concessional nature of these funds means that they retain a high share of external debt (Table 7.1): in 1991 aid accounted for nearly 90 per cent of gross disbursements, but under two thirds of total external debt. However, the large debt has not meant that Tanzania's forex shortage had been exacerbated to any large degree by debt service obligations, since the country has received considerable debt relief: amounting to US\$2.5 billion in the four Paris Club meetings up to 1993.³ The debt service ratio (the ratio of total debt service to exports) is therefore only a little over 10 per cent, a figure whose significance is reduced further by the fact that exports cover only about one third of the import bill.⁴

Debt relief has been just one part of the swelling aid inflows to Tanzania since 1986, the date of the adoption of the Economic Recovery Programme: annual inflows increased by more than 50 per cent in real terms in the two years from 1985. These high levels of aid are in contrast to the withdrawal of support of most donors from Tanzania during the early 1980s. As Figure 7.1 showed, Tanzania enjoyed an aid boom in the 1970s. A substantial part of this boom was financed by donors (notably the Scandinavian countries, the Netherlands and Canada) who identified with the African socialist orientation of the country's development strategy. But it is important to remember that the World Bank also provided considerable funds, and although a review by the Bank of its experience in Tanzania says that some staff voiced misgivings at the time, the review fully acknowledges that the Bank never challenged Tanzania's strategy throughout the decade (World Bank, 1990). This position changed with the launch of structural adjustment policies in the 1980s.

Negotiations with the IMF broke down in October 1979 and new drawings were not made again until 1986. Subsequently, the government was also unable to come to agreement with the World Bank, a major sticking point being the extent of devaluation required. Most other donors also reduced their support at this time. The government moved toward adjustment in a series of "go it alone" packages (the National Economic Survival Plan of 1981 and the Structural Adjustment Plan of 1982-85). These reforms were not sufficiently far-reaching in themselves

Figure 7.1

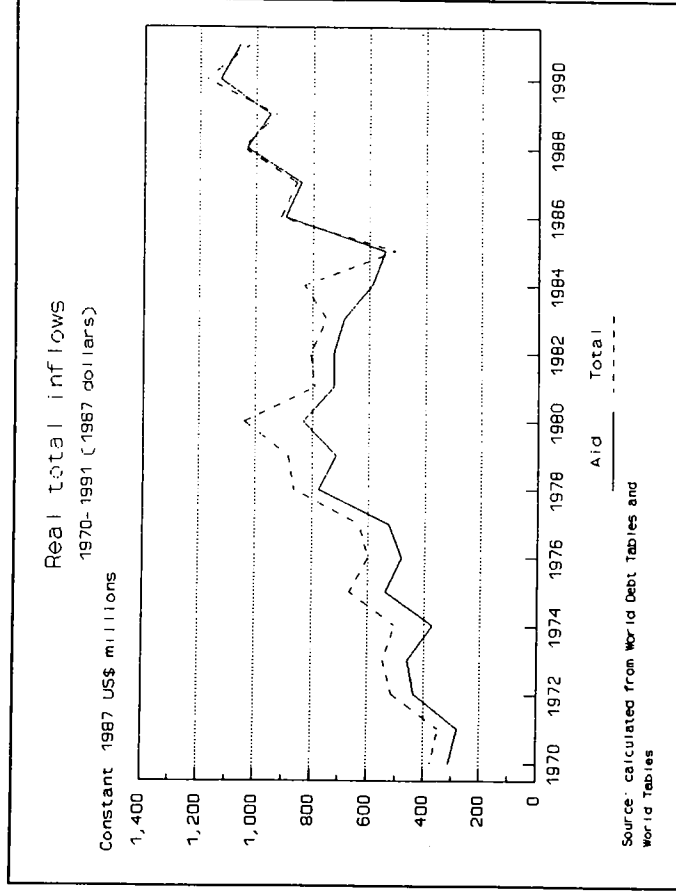


Table 7.1 Structure of external debt in 1991

	Total debt	Gross Disbursements	Amortization	Interest
In millions of US\$				
Aid	3,877.6	251.6	23.7	14.9
o/w multilateral	1,727.0	186.0	23.7	14.9
bilateral	2,150.6	65.6	0.0	0.0
Other official	1,659.1	4.6	39.1	18.4
o/w multilateral	241.2	3.7	35.9	18.4
bilateral	1,417.9	0.9	3.2	0.0
Other	487.1	30.3	28.4	2.1
Total	6,023.8	286.5	91.2	35.4
Shares				
Aid	64.4	87.8	26.0	42.1
o/w multilateral	28.7	64.9	26.0	42.1
bilateral	35.7	22.9	0.0	0.0
Other official	27.5	1.6	42.9	52.0
o/w multilateral	4.0	1.3	39.4	52.0
bilateral	23.5	0.3	3.5	0.0
Other	8.1	10.6	31.1	5.9
Total	100.0	100.0	100.0	100.0

Note: Other comprises all short-term debt, private long-term and use of IMF credits. Source: *World Debt Tables*, 1992

to attract donor support, though they laid the basis for engaging in policy dialogue. The situation changed with the ERP.

Despite this uneven history Tanzania must be seen as a favoured recipient of aid: over the 22 years from 1970 to 1991 it received US\$ 12.7 billion in aid; from 1987 to 1990 it received seven per cent of all aid flowing to Africa South of the Sahara. What has been the effect of these funds on the Tanzanian economy?

7.3 Accounting for aid in the Tanzanian economy

The traditional view of aid's contribution to growth is through the increase it allows in imports and investment (as in the two gap model, see Chenery and Strout, 1966): however, most of the debate over the macroeconomics of aid is concerned with ways in which aid may not result in the desired increase in either of these aggregates. A useful starting point for the analysis of these debates is the accounting identity presented in Chapter 2:

$$\text{Savings gap} = \text{Current account} = \text{Capital account} \quad (7.1)$$

First take from this identity the fact that a current account deficit must be financed by a net capital inflow; re-arranging this condition gives:

$$M = X + AID + OF + dR \quad (7.2)$$

where M is real imports, X exports, AID net aid inflows, OF other sources of forex and dR the change in reserves (a positive sign indicating a decrease in reserves).⁵ It is clear from equation (7.2) that, other things being equal, an increase in aid must result in higher imports, in order for balance to be maintained. Put another way, if we take our starting point as 1970, we would expect real imports to have grown by the same absolute amount as have aid inflows. In fact, despite the massive increases in aid since 1970 real imports have remained more-or-less constant (in fact experiencing a slight decline).

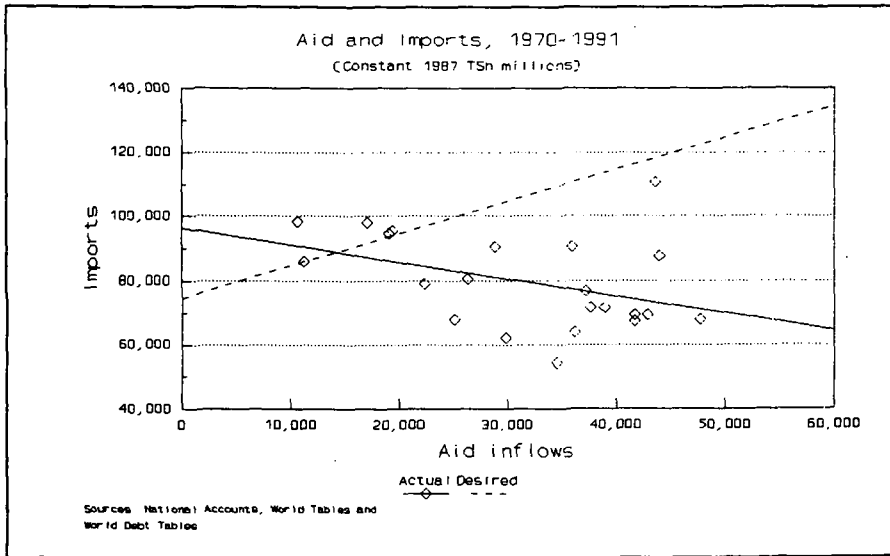
This point is brought home by Figure 7.2, which shows the scatter plot of imports against aid. The dashed 45° line (drawn through the observation for 1970) shows the values of imports we would expect if the *ceteris paribus* assumption were to be correct. The solid regression line shows what has in fact happened: higher aid has been associated with lower imports.⁶

Hence all the factors in equation (7.2) cannot have been constant aid was increasing - other sources of foreign exchange must have been decreasing, so that the aid did not result in the higher import levels which would have been attained had these other sources remained constant. The important question for the macroeconomic analysis of aid is: is there a causal relationship through which aid has led to the declines in these other sources of forex, so that aid is bound not to increase imports by the amount of the aid inflow?

Equation (7.2) identifies three other sources of forex, each of which may be influenced by aid:

- other flows: the main component of this category is non-concessional borrowing. In the face of higher borrowing the recipient may substitute away from these more expensive sources of finance (a point maintained by the critic of aid, Peter Bauer). On the other hand, the World Bank has maintained that aid flows which support policies for sustainable growth will act as a catalyst to crowd in non-concessional flows (so that the coefficient on aid in a reduced form regression for imports can exceed unity). Also subsumed under this heading is the possibility that the aid is used to service debt (which a part of it is indeed intended for).
- change in reserves: the recipient may take the opportunity afforded by higher aid to accumulate reserves.
- aid as Dutch disease: Dutch disease effects caused by the aid may result in a deterioration of export performance.

Figure 7.2



In Part 7.2 it was argued that debt service has not been a significant drain on Tanzania's forex availability. Econometric analysis (reported in White and Wuyts, 1993: Chapter 3) finds at most a weak link between aid and reserves. There does appear to have been some complementarity between aid and other inflows until the early 1980s, but a displacement effect thereafter. It must be remembered however that other flows are not a very significant source of foreign exchange. As Table 7.2 shows the main feature of changes in forex availability have been the increase in aid's share (to nearly half in the most recent period) at the expense of exports, whose share has fallen from three quarters to under one third.

It is not just the level of exports which matter, but how much they are able to purchase: a notion which is captured by the capacity to import. Changes in the capacity to import are the outcome of changes in two variables: real exports and the terms of trade. Figure 7.3 shows trends in all three variables. It is clear that until the mid 1980s the fall in the capacity to import reflected lower export volumes compounded by a general deterioration in the terms of trade. Since 1986 some modest export growth has been achieved, but has been more than offset by continued deterioration of the terms of trade so that the capacity to import has continued to decline. We shall argue in the following section that a link can be made between the deteriorating export performance and the aid boom during the 1970s. An important part of our argument is the relationship between aid and investment, and we turn now to the accounting identity that underlies this link.

The sources of investment are given by the identity:

$$I = GDS + AID + OF + dR \quad (7.3)$$

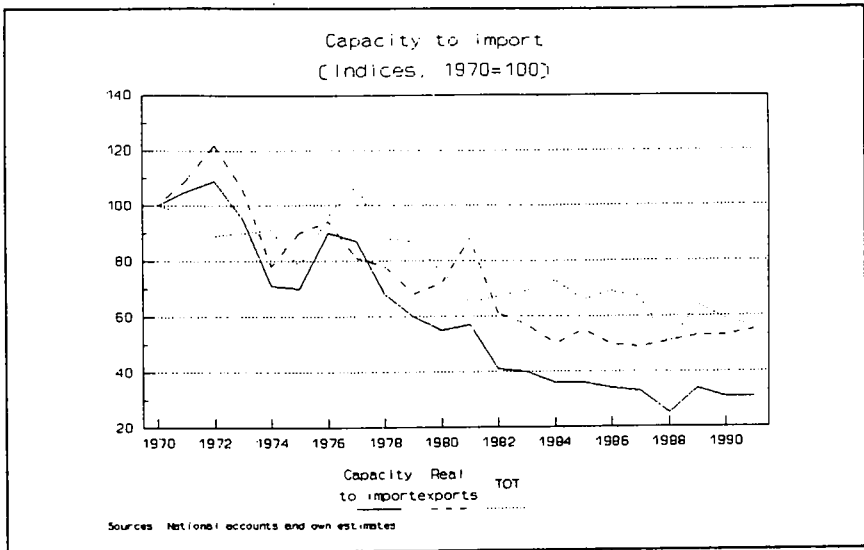
where I is investment (gross fixed capital formation) and GDS gross domestic savings. If the *ceteris paribus* assumption holds then an increase in aid will result in a one-for-one increase in investment. Displacement effects will undermine aid's impact on investment. We have already discounted the quantitative significance of possible displacement effects on other inflows (OF) and the change in reserves (dR). This leaves domestic savings: the idea that aid may displace domestic savings being one of the longest running debates in the macroeconomics of aid (see

Table 7.2 Financing of imports of goods and services (per cent total imports)

	Exports	Net capital & transfers	Exceptional financing	Payment arrears	Changes in reserves	Imports (Million TShs)
1967	98.5	11.3			-5.2	2,001.6
1968	95.7	11.3			-5.1	2,195.4
1969	107.0	13.0			-5.9	2,076.7
1970	92.7	22.6			0.8	2,699.0
1971	83.9	30.0			-4.2	3,271.6
1972	91.8	27.9			-13.8	3,420.8
1973	83.1	24.3			-5.8	4,036.9
1974	62.0	21.5	0.6		17.3	5,927.9
1975	61.9	32.3	4.2		3.0	6,247.4
1976	83.9	16.6			-2.5	6,180.0
1977	79.2	18.9	3.0		-14.1	7,014.3
1978	49.7	24.7	1.3	5.3	20.0	9,756.1
1979	57.2	33.2	2.0	8.9	4.2	10,012.8
1980	47.8	22.6	10.4	13.8	-0.9	11,774.6
1981	58.2	30.2	7.0	-0.2	-6.6	10,161.8
1982	44.7	26.3	14.9	10.8	3.4	11,335.0
1983	54.6	30.2	6.7	7.7	-1.6	10,019.3
1984	55.8	14.5	4.8	17.8	0.3	15,666.1
1985	37.1	49.7	5.1	33.9	0.8	20,534.2
1986	35.8	56.5	7.7	--	-2.0	40,720.0
1987	28.0	62.3	5.7	--	-0.7	91,767.7
1988	33.7	59.3	6.7	10.3	3.0	149,352.3
1989	34.5	44.0	8.3	2.8	4.0	223,282.8
1990	32.9	49.8	1.2	-2.9	-6.0	325,252.8

Sources: (1) Bank of Tanzania, *Tanzania: Twenty Years of Independence (1961-1981)*.
(2) Bank of Tanzania, *Economic and Operations Reports* (various issues).

Figure 7.3



Griffin, 1970, for the common starting point of the debate and White, 1992, for a review critical of Griffin's arguments). What do the Tanzanian data suggest about this relationship?

Figure 7.4 shows the scatter plot of investment against aid and the 45° line - the two are virtually indistinguishable! The fitted line passes near the observation for 1970 and has a slope insignificantly greater than unity. Since we have already argued that the only factor left in analyzing the aid-investment relationship is domestic savings, this figure suggests that aid has not displaced savings. Figure 7.5 supports this view, if in a rather more complex form.

Investment boomed in the 1970s - the investment rate reaching over 30 per cent. The gap between the investment and savings rate did indeed widen, indicating that inflows played a part in financing this investment boom. But it is clear that domestic savings also made a significant contribution, increasing in line with the booms in both investment and aid. The picture in the 1980s and early nineties is rather different. Savings collapsed during the 1980s and have shown little sign of recovery; but the decline in savings preceded the 1986 aid boom.

The investment rate has increased dramatically in the late 1980s - but this trend is in part a price effect since investment goods are mostly imported; in real terms the investment rate is a little above the peak of the 1970s. During the early part of the aid boom (1986-89) the increase in funds was not matched by a concomitant increase in investment, though this situation has changed in 1990-91. The initial non-responsiveness of investment to higher aid reflects the fact that much aid in the second aid boom was programme aid (mostly import support for consumption and intermediate goods) rather than project aid for capital imports for further investment. By contrast, the first aid boom was dominated by project aid and thus contributed to the investment boom at that time. It is through aid's role in supporting these high investment levels in the 1970s that we now argue the inflows exercised Dutch disease effects on export production.

Figure 7.4

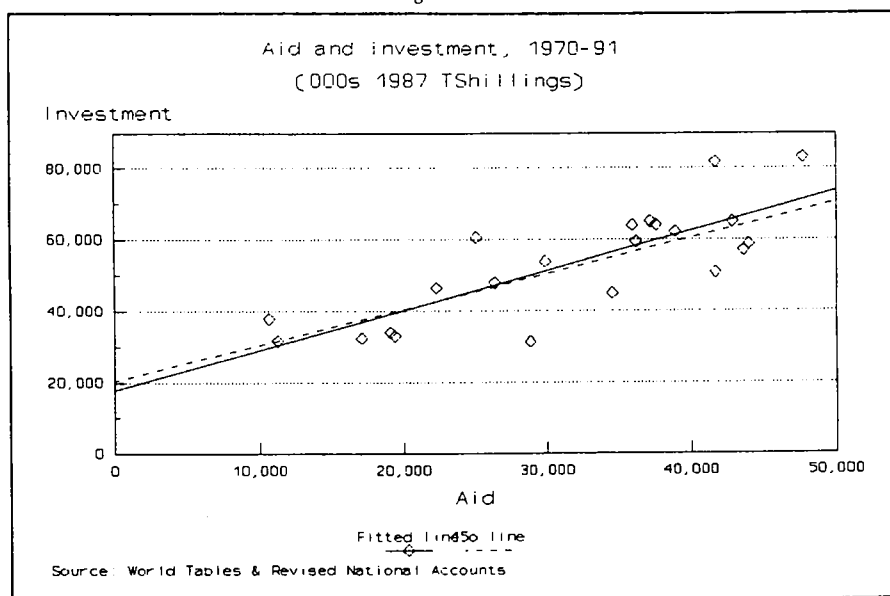
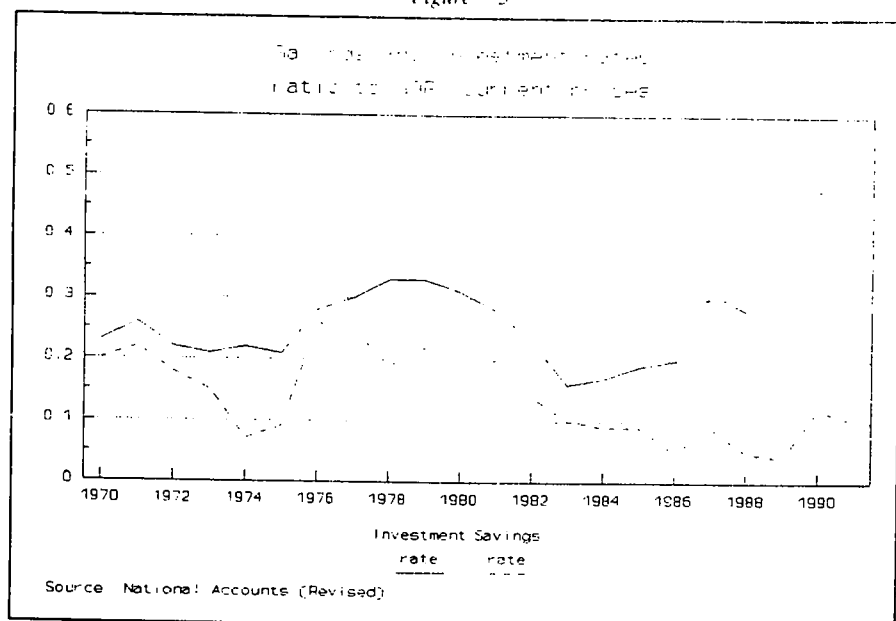


Figure 7.5



7.4 Impact of aid on economic development

The foregoing account has presented the magnitudes, nature and patterns of aid inflows to Tanzania. It has been shown that there was a sharp increase in aid inflows during the 1970s; reaching its peak in 1980. The latter date is shown to mark the end of the first aid boom. Figure 7.1 shows this fact very clearly: the first half of the 1980s was characterised by falling aid levels. This period was followed by a sharp increase in aid flows into Tanzania during the second half of the 1980s and early 1990s. This period represents what is described as the second aid boom in Tanzania. During both aid booms, official development assistance accounted for the bulk of the inflows.

The aim in this section is to examine the impact of aid on economic development and growth under both booms. In this regard, the impact of aid on imports and investment will be analysed. This will then be related to growth and export performance with the goal of explaining the observed patterns. We begin this analysis by looking at investment under both aid booms.

The first aid boom reached its peak and actually ended in 1980 and the second did not begin until 1986. The question is then what happened to investment in both cases. In this regard a number of sub-periods can be distinguished during the first aid boom. The first sub-period, which will serve as our reference point, predates the boom itself. The last three years of the 1960s constitute the aftermath of the Arusha Declaration in which a change in the development strategy was announced, giving the state a leading role in the development process. This period also witnessed a rise in the investment ratio from an average of 17.5 per cent during the three years preceding the Arusha Declaration to an average of 21 per cent. This then marked the beginning of the investment drive that characterised the 1970s. The 1970–73 sub-period coincided with the implementation of large infrastructural projects as a result of which gross investment ratio rose to 26.5 per cent on the average. This rhythm was interrupted by the first oil crisis and food crisis following three consecutive years of drought. While there was a rise in aid inflows during the period 1974–75, the investment ratio actually dropped to slightly below the pre-crisis level, indicating that part of the increase in aid represented balance of payments support to enable the country to overcome the crisis. Evidence of this fact is that thereafter aid

inflows reverted to their pre-crisis trend levels and the investment ratio rose over the period of 1976-80. On the whole, then, with the exception of the 1974-75 oil and food crisis period, aid inflows helped to propel gross investment ratio to even higher levels in each succeeding period until 1979.

That aid inflows propelled investment during the first aid boom is also evidenced by the drop in the gross investment ratio during the period 1980-83 to about 23 per cent of GDP, following the decline in the volume of aid inflow. However, the subsequent recovery in the gross investment ratio predates the adoption of the recovery programme in July 1986. Between 1984 and 1986, the investment ratio rose to unprecedented levels, reaching an average of 27.5 per cent. The second aid boom period witnessed an even higher investment ratio of over 40 per cent, though, as observed above, the high ratio is partly a price effect - real investment has risen above its 1970 peak, but not by so much as suggested by the current price ratio.

There are, however, two important differences in the investment patterns under the two boom periods. The first relates to the sources of investment. Table 7.3 shows the distribution of investment between the public and private sectors during the two aid booms. It can be seen that while throughout the 1970s and early 1980s the public sector accounted for nearly two-thirds of the total investment on the average, that proportion had dropped to less than 40 per cent in the period immediately before the second aid boom and remained at about the same level even during the boom itself. The important distinction is, therefore, that while the first aid boom propelled public sector investment, the second one did not.

There is a second important distinction which is not easily made. This is clearly brought out by answering the question as to whether or not the second aid boom was actually the cause of the investment boom during this period. The answer would appear to be in the negative, partly because private investment boom predates the second aid boom, but also because, looking at the structure of investment itself, a significant proportion of investment during this period consists of acquisition of transport equipment especially light- and heavy-duty commercial vehicles imported under the 'own foreign exchange' import scheme introduced in 1983 and

Table 7.3 Composition of gross investment (GFCF)

	1964-66	1967-69	1970-73	1974-75	1976-79	1980-83	1984-86	1987-91
GFCF as per cent of GDP	17.5	21.0	26.5	22.8	26.0	23.1	27.5	34.6
Public sector GFCF as per cent of total GFCF	45.0	55.0	76.6	67.5	56.0	61.0	39.5	36.6
Roads, bridges and other works	3.2	5.8	11.8	9.0	6.1	4.8	3.0	8.8
Equipment as per cent of GDP	8.2	9.5	11.1	9.8	14.6	12.9	20.0	21.6
o/w transport equipment	3.2	3.4	3.3	3.7	5.1	3.4	13.8	14.5
Buildings as per cent of GDP	4.6	4.9	4.4	4.0	4.7	4.8	3.9	4.3

Source: *URT Economic Surveys* (various issues).

broadened in 1984. It is therefore plausible to suggest that the second aid boom did not have as much impact on investment as the first one.

Since in theory the impact of aid on growth is through its impact on the rate of investment, it is to the examination of the growth pattern over the two aid booms that we now turn. Table 7.4 shows composition of growth and its pattern over the periods 1967/69 to 1983 and 1984 to 1991. While the former represents the period of the first aid boom, the latter coincides with the second one. There are two distinct characteristics of output growth during the first aid boom. First, output growth decelerated over time. At the end of the 1960s, output grew at an average annual rate of 4.3 per cent. The latter was slightly surpassed during the 1970/73 sub-period. However, the subsequent sub-periods witnessed a sharp deceleration in output, the acceleration in the rate of investment notwithstanding, reaching its lowest level in the 1980-83 sub-period.

The second distinct characteristic of output growth relates to its composition. While at the end of the 1960s the directly productive sectors accounted for about 60 per cent of total growth, with manufacturing accounting for about a fifth, subsequent sub-periods witnessed a deteriorating performance in the directly productive sectors and a growing prominence of the tertiary activities, particularly public administration and community services: the share of manufacturing output growth almost halved while that of public administration actually trebled – a clear indication of an eroding material base of the economy. By the end of the 1970s, there was a virtual stagnation of all directly productive sectors of the economy and overall growth of output (which had fallen to less than half that in the previous sub-period) was almost wholly accounted for by growth in tertiary activities where public administration and community services – with 70 per cent of growth – were dominant. By the early 1980s, the industrial sector had virtually collapsed and the economy had virtually come to a halt.

The intervening period (the period between the collapse of output and the beginning of the second aid boom) witnessed agriculture-led output recovery. It can be seen that agricultural output growth accounted for over two-thirds of the total output growth. There was also a slight

Table 7.4 Composition and pattern of output growth (19967-91)
(sector weighted annual growth rates)

	1967-69	1970-73	1976-79	1980-83	1984-86	1987-91
Primary Production	0.5	1.0	0.0	0.9	2.2	2.3
o/w Agriculture	0.7	1.2	0.0	0.9	2.2	2.2
Secondary Production	2.1	1.6	0.0	-1.1	0.3	0.7
o/w Manufacturing	0.8	0.5	0.0	-0.8	-0.1	0.3
Transport	0.8	0.8	-0.1	0.01	0.0	0.2
Tertiary Production	1.7	1.8	1.9	0.6	0.7	1.1
o/w Public administration	0.4	1.2	1.4	0.3	-0.4	0.3
Total GDP growth rate	4.3	4.4	2.0	0.4	3.2	4.1

Sources: (1) 1967-1983 data: Kimei *et al.* (1990); (2) 1984-1991 data: derived from URT, *Economic Survey 1991*.

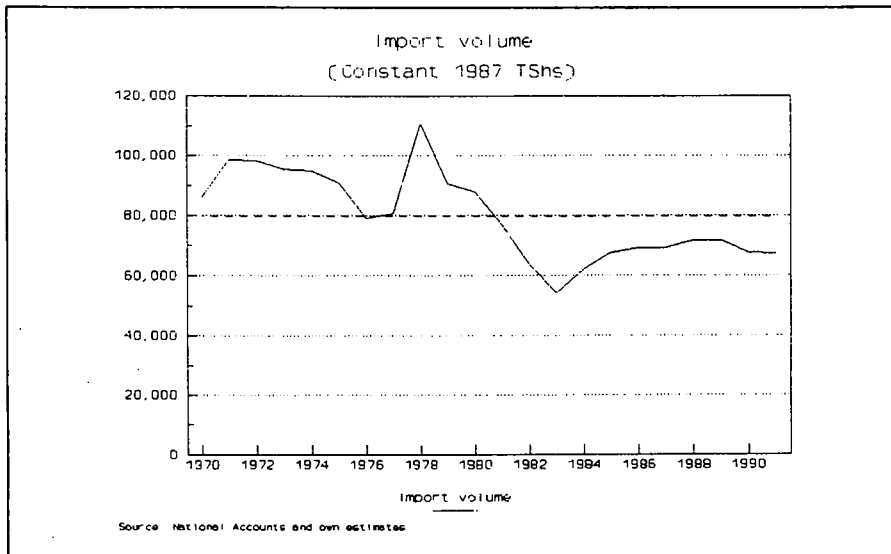
recovery in the construction and transport sectors. This output recovery spread to all the sectors of the economy during the second aid boom period which also coincides with the period of policy reforms. It is also noteworthy that directly productive activities accounted for the bulk of growth accounting for roughly about four-fifths of the total output growth, with agriculture dominating during this latter period.

To summarise, it is clear that while the first aid boom-propelled an investment boom, mostly in the public sector, it was not associated with output growth. In fact acceleration in the rate of investment went along with the deceleration of output growth – the case of investment without growth (Doriye & Wuyts 1992). The output recovery during the second half of the 1980s predates the second aid boom. However, the second aid boom appears to have led to the spread of recovery to all sectors of the economy. The next task is therefore to explain this changing pattern of growth. In this regard there are two important factors.

First, foreign aid affects output growth through investment and imports. The question is what happened to imports during the two aid booms. Figure 7.6 shows the evolution of imports over the period spanning the two booms. The overall picture is that imports volume did not grow with increasing aid volume. At best, in real terms imports fluctuated around a horizontal trend; peaking during the beverages boom in 1976–77, deepening during the crisis of the early 1980s and then recovering during the second aid boom.

Table 7.2 showed the sources of financing of imports over the period 1967–90. Total sources of financing shown in the table need not add to 100 per cent because some of the smaller items of financing such as errors and omissions, suppliers' credits as well as use of IMF facilities and debt rescheduling are not included. A remarkable feature of that table is that while foreign aid inflow increased, exports fell and progressively financed a declining proportion of imports, from over 100 per cent in 1960 to less than a third in 1990. It is therefore clear that imports did not grow with the inflow of aid because other sources of imports financing – in equation (7.2) – notably exports, declined sharply.

Figure 7.6



The second factor relates to the pattern of output growth. It is to be recalled that output growth decelerated under growing aid inflows and investment in the 1970s and that in the second half of the 1970s, increased aid inflows have led to output recovery. To see why this was so, we turn to the analysis of the types of imports aid financed under each aid boom. An important fact to be borne in mind here is that in the 1970s, aid inflows financed foreign currency costs of development projects in infrastructure, manufacturing and social services facilities.

This character of aid had a number of implications. First, it meant that aid inflows paid for the foreign exchange costs of imports of equipment and experts. This fact is reflected in the high and rising imports of capital goods in the 1970s. On the other hand, the recipient had to find the resources for financing local costs of the project. In the particular case of Tanzania, the required resources were raised through forced savings as against the widely debated crowding-out effects (Griffin, 1970); the domestic savings rate rose during the first aid boom (see Figure 7.5).

Secondly, in addition to financing local costs of aid-financed projects, the recipient economy bore the recurrent costs of operating the installed productive capacity. These costs took two forms depending on the nature of the project. In the case of industrial projects, a large proportion of recurrent costs consists of imported intermediate inputs, particularly industrial raw materials and spare parts. For infrastructural projects and social services facilities, a high proportion of the costs consisted of domestic currency operating and maintenance costs to be borne by the budget. In both cases there were constraints to the utilisation of installed capacity.

The constraint to the operative of industrial capacity was the availability of foreign exchange the primary source of which was export earnings. Two factors worked to tighten the foreign exchange constraint during the period. The first of these was the sharp fall in export earnings mostly accounted for by the drastic fall in the export volume already alluded to earlier. The key question is what accounted for the drastic fall in exports. There are two competing explanations to this phenomenon. The first explanation which has been presented with considerable rigour but with the least correspondence to reality is that by Bevan et al. (1987,

1989 and 1990). The central point of this explanation is that under a regime of government price controls and rationing of basic manufactured consumer goods, the peasantry faced with persistent shortages of such goods responded by reducing the supply of cash/export crops. This in turn reduced the capacity of the economy to import and hence to supply consumer goods inducing a further cutback in peasant supply of cash crops. There are two fundamental flaws to this explanation. First, it fails to take a historical view of export volume decline and concentrates on the brief period between 1979 and the early 1980s. But export volume declined almost uninterruptedly since 1974. It is clear that, for the most part, export volume declines took place before the onset of consumer goods shortages (Doriye, 1991).

The second criticism which is also an alternative and more plausible explanation than the one offered is that the authors ignored the relative prices of food and those of export crops. There is considerable literature on this point (see Wuyts, 1994) which suggests first, that relative prices are important in the long-term export volume growth and, second, that during the period relative prices moved against export crops and in favour of food crops. This trend is explained by three factors. One, given export market prices, the stability of the nominal exchange rate meant that nominal producer prices of export crops only changed marginally. Two, given a tight import control regime, expansion in consumer demand induced by the investment boom was directed at the domestic consumer goods market including food products. It is true that officially, there was a price control virtually on all consumer goods items. However, unlike export crops, food crops had a multi-channel marketing system including the parallel market, so that even though official pricing policy favoured food crops over export crops, the parallel market widened the wedge between export crop and food crop prices even further - see Wuyts (1994) for a detailed discussion of these issues.

Having explained the first constraint on domestic import capacity, it remains to look at the composition of the intermediate imports in Table 7.5. It can be seen that throughout the 1970s and early 1980s, intermediate imports fluctuated between 45 per cent and 55 per cent of total imports. Within intermediate imports, there are two competing categories, namely, imports of oil and those of industrial raw materials. Table 7.5 shows that oil imports had a first claim

Table 7.5 Composition of imports (1967-1990)
(% of total imports)

	1967-69	1970-73	1974-75	1976-79	1980-83	1984-86	1987-90
Capital goods	29.3	33.0	27.0	40.0	35.6	32.3	40.0
Intermediate goods	42.1	47.4	48.2	46.2	55.0	50	42.7
<i>o/w</i> oil as % of total	8.1	8.9	15.0	14.8	29.2	16.5	12.6
Industrial raw materials	34.0	38.5	33.2	31.4	25.8	33.5	30.1
Other imports	28.6	19.6	24.8	13.8	9.4	17.7	17.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: As in Table 7.4.

to resources squeezing out imports of industrial raw materials every time there was an increase in the price of oil. Accordingly, given domestic import capacity, the amount available for industrial raw materials depended on the changes in the price of oil.

The argument so far is that growth of output in the 1970s and early 1980s was constrained by domestic import capacity for recurrent imports on the one hand, and by shortage of budgetary resources for the operation and maintenance of economic and social infrastructure and facilities. The next question is what explains the change in the growth pattern during the second aid boom? Two factors account for the performance in this regard. First, it can be recalled that some economic recovery was already underway even before the second aid boom. In part, this was attributable to the increased availability of imports funded under the own exchange scheme, but also because of improvements in weather conditions leading to agricultural output recovery following three consecutive years of drought. Nevertheless, the spread of recovery to other sectors during the second aid boom period is accounted for by the shift of aid from project to general import support providing for an increase in the imports of industrial raw materials as well as for rehabilitation of existing capacity. This shift in aid to general import support is also reflected in the budget by a shift of aid from the development budget to the general budgetary support (Doriye *et al.*, 1993).

Policy changes under two aid booms

The two aid boom periods represented two divergent policy regimes. The late 1960s and the 1970s was a period of construction of a new economic model out of the post-independence one. In the earlier years, the government confined its role to the maintenance of law and order on the one hand, and the creation of economic and social infrastructure on the other. Investment in the directly productive activities was left to private enterprise including foreign firms (FYP 1969). In this regard, Tanzania's development strategy in the immediate post-independence period was similar to that adopted by other newly independent developing countries particularly, in Africa. This situation changed in 1967 when the ruling party announcement of a change in the development strategy bestowed upon the government a leading role in development.

There followed by a number of policy and structural changes. To begin with, nationalisation measures were instituted, including nationalisation of banking and other financial institutions, import-export trade and a number of large manufacturing entities. Secondly, subsequent investment in these areas - described as the commanding heights of the economy - was vested in public enterprises which had been created to act as sources of local investment initiatives. In addition, there were changes in policies outside the industrial sector. In the first place, rural development strategy was reconsidered in view of the growing rural incomes and wealth differentiation. To this end, the objective of rural development policy was modified in order to achieve increases in output on the basis of cooperative and collective production. In the urban areas, this was followed by the nationalisation of real estate property including residential housing. Finally, there was also a change in the mode of delivery of social services. Private delivery of social services on a religious or ethnic basis was banned and the objective of social policy under the new regime became to ensure equitable and free provision of social services by the state (Doriye, 1992). These initial measures were followed by others of institutional nature. In 1972, local government administration was replaced by a decentralised system of central government and four years later the cooperative movement was replaced by a system of state-owned crop authorities which handled not only the marketing of agricultural produce but also distribution of agricultural inputs.

There was also a change in the mode of macroeconomic management under the new strategy. Following publication of wages, employment and incomes policy in 1969, minimum wage legislation was backed up by a price control ordinance enacted in 1973 and established a national price commission. At the same time, a system of Finance and Credit plans was introduced to allocate not only investment but also credit resources to different sectors. On the external account, a system of foreign exchange planning - also introduced in 1972 - was backed up by a system of exchange control and import licensing. Under the latter, a dual system, under which an open general license operated side with a system of specific licenses, was put in place. However, as the foreign exchange gap widened, an increasing number of items were progressively removed from the open general license. By the end of the 1970s, the open general license had ceased to operate and was abolished in 1980, to be replaced fully by a system of

specific import licenses. Throughout the 1970s, a regime of a more or less stable nominal exchange rate was maintained. Use of the exchange rate as an instrument of trade and exchange management was opposed on the grounds of its inflationary effects, and that it would undermine the price control policy. Accordingly, the exchange rate was effectively assigned a monetary policy role.

These are two basic reasons why in spite of its policy regime, Tanzania received massive aid inflows, including from the World Bank, in the 1970s. In the first place, the underlying economic model which assigned a pre-eminent role to the state in economic development was in keeping with the mainstream economic development theory. Secondly, there were certain elements in the country's policies that captured the sentiments of the donors, particularly those of social democratic persuasions. Within the World Bank, the country's primary health care programmes, commitment to universal primary education along with the overall apparent rural development orientation of the government's policies, were viewed to be consistent with the basic needs strategy espoused by that institution during the period. Indeed, Tanzania (along with mainland China) was cited as one of the countries that pursued a 'redistribution with growth' development strategy (Chenery *et al.*, 1974).

By the end of the 1970s, however, the underlying weakness of the 'economic model' were exposed by a constellation of misfortunes. The break-up of the East African Community, the war with Uganda, persistent drought and the second oil price shock all combined to rock the system. By this time, it was becoming clear to both the government and the donors that furthering the investment drive was both unsustainable and undesirable on account of the economies' inability to meet the resultant recurrent costs. Some donors had already begun to provide import support to operate their aid-funded projects. This is indicated by the emergence of an item 'commodity import support' in 1978/79 in both the government budget and the balance of payments.

Nevertheless, there were differences between the government and the donors on two accounts. To begin with, there was a divergence of views as to the causes of the crisis and the

required policy response. While the government emphasised the role of external factors including deterioration in the terms of trade, there was a broad consensus among the donors that the macroeconomic policy framework was the root cause of the crisis. Similarly, there was a divergence of views on the nature of adjustment required to put the economy back on the track. The government's view was that increased balance of payments support would put the economy on track while the donors believed that a fundamental change in macroeconomic management was required. In this regard, an increase of balance of payments support was made conditional upon an agreement with the IMF on an appropriate macroeconomic policy framework. It is this divergence of views which actually brought an end to the first aid boom. Two government actions brought this about.

First, the government's insistence that there was nothing wrong with the overall macroeconomic policy framework made it virtually impossible to reach an agreement with the Fund. Indeed, in January 1980 the government actually made it clear that the underlying economic model was not a subject of negotiation. In Nyere's words:

Tanzania is not prepared to devalue its currency . . . It is not prepared to surrender its right to restrict imports. Nor are we prepared to deal with inflation and shortages by relying on monetary policy . . . Our price control machinery may not be the most effective in the world, we will only strive to make it more efficient. . .

(Nyere, 1980)

Negotiations then stalled on the questions of the necessity or desirability of exchange rate depreciation as an instrument of adjustment, on the liberalisation of external and domestic trade, and on the control of inflation. Surprisingly, in September 1980, however, the government successfully negotiated a standby agreement with the fund which did not require an exchange rate adjustment. Even then, the agreement was discontinued on account of government's failure to observe first quarterly performance criteria on bank borrowing and on reduction of payments arrears.

Faced with a mounting deficit on the recurrent budget the government responded by cutting on the development budget, postponing ongoing projects and shelving new proposals. In the meantime efforts were made to persuade major donors to switch project aid to general import support. Had this happened, the beginning of the second aid boom would have coincided with the end of the first one and the distinguishing characteristic would have been the content of aid rather than magnitudes. As this did not happen the effect was therefore a sharp fall in foreign loans and grants.

When negotiations with the Fund resumed in 1981, the prospects for an agreement had become remote, as the government adopted a 'self-reliance' approach under which a number of proposals to increase import capacity, reduce import dependence and increase food self-sufficiency, were put forward, none of which could be made workable in the short run. At the same time practically all the proposals were to be implemented through administrative means as against pricing policy and other indirect means. Evidently, the government had no viable alternative programme of dealing with the crisis. Instead it opted for unplanned austerity measures, and imprudent external borrowing dictated tightening resource constraints. In the meantime donors also withdrew their commodity import support programmes leading to a further resource squeeze.

By 1983 it was clear that the policy regime so far pursued was unsustainable and that a new approach was required. To this end, a series of 'running adjustments' were designed to close the gap in the negotiating position with the Fund. They were 'running adjustments' in that they were introduced with a long delay after they had been proposed by the Fund. In this regard a 20 per cent devaluation and increases in producer prices of major export crops were announced in the 1983/84 budget statement. Further macroeconomic policy measures – which included expenditure cuts, revenue measures, exchange rate adjustment, producer price increases, export promotion incentives and import liberalisation under what was known as 'own exchange import scheme' – were announced in the 1984/85 budget speech. These measures constituted a major departure on the part of the government from its earlier position. It was so recognised and received a substantial donor endorsement.

The 1984/85 measures were the basis for subsequent negotiations and the agreement reached with the Fund in July 1986. Following that agreement and an earlier consultative group meeting, substantial general import support financing was put in place, marking the beginning of the second aid boom. This latter can therefore be regarded as supporting a new policy regime whose principal features can be summarised as follows.

To begin with, the success of this regime is not so much quantitative as policy and institutional changes. In terms of the external account and the budget, the effect has been to mobilise financing for an enlarged deficit, thereby providing for a decompression of imports and government expenditure. Nevertheless, important policy and institutional changes took place during the period. Far-reaching changes in the trade and exchange regime were effected. Initially, these took the form of managed exchange rate adjustments and a gradual shift from administered to market-based allocation of foreign exchange. With regard to the exchange rate, the aim was to remove past cumulative overvaluation of the Tanzanian shilling on the one hand, and to establish equilibrium exchange rate on the other. While the former was determined on the basis of purchasing power parity estimates, the indications of movements towards an equilibrium exchange rate were a degree to which foreign exchange allocation were increasingly market-based and the extent of foreign exchange premium in the parallel market.

The initial step towards market-based allocation of foreign exchange consisted of the reintroduction of the open general license in February 1988 when US\$5 million was set aside monthly for allocation to importers of industrial raw materials and spare parts. In January 1989 ceilings to individual applicants were doubled to US\$1 million. Subsequently, the system moved from an expanded positive list of eligible items to a negative list of prohibited items for security and health reasons. Since the second half of 1993, the open general license has been replaced by a system of weekly foreign exchange auction. These developments in the foreign exchange allocation system have been underpinned by changes in the mode of exchange rate determination from a crawling peg to a managed float. To this end in April 1991, the parallel market was legalised when foreign exchange bureaux were licensed to deal in foreign exchange at a freely determined exchange rate. The average of the bureaux' rates was then used as an indicator of

the official exchange rate. Movement towards the 'equilibrium' exchange rate was predicated upon gradual reduction in the premium of bureau over official rate. Unification was achieved in August 1993, when the weighted average auction rate was used to determine exchange rate on weekly basis. The system is nevertheless managed in the sense that the central bank sets a cut-off rate to forestall a possibility of exchange rate appreciation.

Apart from the decontrol of domestic consumer prices and deconfinement of the internal distribution system, two other reforms are central to the emerging policy regime. The first relates to the institutional reform in marketing of agricultural produce. To the extent agricultural marketing was under state-owned marketing institutions, this activity had become quasi fiscal. Consequently, bank liabilities contracted by these institutions had frequently been borne by the budget. It became clear early in the programme that the operations of the marketing boards stood in the way of control over monetary growth and that to the extent the ultimate liability for their financial dealings with the banking system rested with the government, it would be virtually impossible to reduce or even maintain the stock of domestic public debt. To overcome this situation, the legal monopoly of the marketing boards has been abolished and private operators licensed to deal in agricultural produce. At the same legal time, the legal relationship between the cooperative unions – re-established in 1984 – and the state has been redefined.

The second area relates to the financial sector reform. It is to be recalled that from 1972, under the system of Finance and Credit Plans, credit allocation authority was vested in the planning agency, the central bank was assigned the responsibility for monitoring the implementation. Under this system, banking management had little say in who the credit should be issued to, irrespective of their credit worthiness. Following recommendations of a Presidential Commission of Enquiry into the monetary and banking system in 1991, legislation was enacted to bar the government from interference in the management of banking portfolio effectively ending the finance and credit planning system. In addition, the banking sector was opened up to private banks, thereby ending legal monopoly of the government in the industry. To provide for a competitive environment, interest rates have been decontrolled; the central bank can, however, influence interest rate structure through its discount rate. Commercial banks access to

the central bank facilities is limited to the discount window and the central bank is expected to become a lender of last resort, an attribute which it had lost since 1972.

To summarise, the two aid booms represent two entirely different policy regimes. Unlike the second aid boom, the first one did not have a direct bearing on the evolution of the economic model of the post-1967 period. The second aid boom took place when it did to support the construction of a new policy regime or, viewed differently, a demolition of the economic model built up in the 1970s.

7.5 Conclusions

Tanzania has experienced two aid booms - one in the late 1970s, peaking in 1980, and the second since the introduction of the Economic Recovery Programme (ERP) in 1986. Both booms have coincided with increases in the investment ratio - but only during the first boom were aid funds being channelled directly into investment. In the later period a large part of increased investment has been by the private sector and the aid funds themselves have been in the form of balance of payments support (debt relief and importing intermediate and consumer goods).

Tanzania's growth record has been mixed. Moderate growth in the first decade following independence was followed by ten years of little or no growth - implying falling per capita incomes. This situation has been reversed since the introduction of ERP, since when real growth in GDP has been over 4 per cent a year. There are several reasons why the first aid boom was associated with "investment without growth". Some of these reasons are to be found in the policies pursued by the Tanzanian government, but donor finance is also partly responsible.

During the first aid boom a large part of aid was project aid, with funds being provided to pay for the import component of investment goods - local costs and recurrent costs were both expected to be the responsibility of government. These items could be ill afforded - the savings rate rose as savings were forced out of the private sector to pay counterpart contributions. But

imported intermediates were in increasingly short supply as the foreign exchange constraint tightened, very largely as a result of the remorseless decline of the capacity to import. Aid contributed to the deteriorating export performance in the 1970s through its effect on relative prices.

Aside from the inflationary impact of the deficit financing, the investment drive pushed up demand for domestic goods, notably foodstuffs - thus shifting the agricultural price ratio in favour of domestic crops and against exports. As a result, export production declined and the foreign exchange constraint tightened. The second aid boom, by contrast, contained a much higher share of balance of payments support - with import support, particularly through the OGL, being available for a wide range of recurrent uses.

The two booms also differ in the nature of the relationship between donor and recipient over policy issues. The development strategy adopted by Tanzania following the Arusha declaration attracted much support from sections of the donor and academic communities. Donors praised aspects of the strategy (for example the attention to basic needs), but its design and implementation remained a government affair. As IFI concern about the suitability of macroeconomic policy increased a rift between the Tanzanian government and donors opened - leading to a six year break from much of the donor community, during which time aid flows slackened considerably. It was only with the adoption of the ERP in 1986 that Tanzania was again following a strategy which won with donor approval, resulting in the resumption of substantial amounts of aid. Donors continue to try to exert considerable influence over the content and pace of policy reform.

Aid's role in Tanzania's development is as mixed as that development itself. Donors not only supported policies in the 1970s which turned out to be a costly mistake, the macroeconomic implications of that support actually exacerbated the situation. The contrast between the first and second aid booms is a sharp one. In the later period aid monies and policies have acted together in a mostly favourable way, with balance of payments support providing the funds to

stimulate investment and growth in sectors which are progressively freed up as policy reform proceeds.

Notes to Chapter 7

1. The two main sources for such data are the OECD's *Geographical Distribution of Financial Flows to Developing Countries* and the World Bank's *World Debt Tables*. The latter are used here; however, analysis in Doriye *et al.* (1993: Chapter 2) shows the series from two sources to be very similar. The deflator used is the dollar import price index (from *World Tables*, updated using national sources).
2. Indeed, since 1986 there has been a net outflow of capital from Tanzania to IBRD (new funds coming through the IDA window).
3. As Nord *et al.* (1993) point out, the magnitude of this relief can be appreciated by comparing the figure with that for Malawi, which is US\$78 million.
4. If Tanzania were not to enjoy continued debt relief at the expiry of the current agreement then the debt service ratio would increase to problematic levels (to an estimated 35 per cent).
5. Three technical points need be noted. First, the capital inflows can be defined either inclusive or exclusive of interest payments; if exclusive (as done here) these payments are included as an outflow in net factor payments, which is included in OF. Second, the aid figure should exclude technical assistance since the imports of services it finances are not captured in the balance of payments statistics. (The aid flows reported in section 2 included TA, but the analysis from this point excludes it). Third, identities that hold in nominal terms often breakdown in real terms because of problems in the deflators: this difficulty does not arise here as all items are deflated by a common import price index.
6. The slope coefficient from this simple regression is -0.53 (t-statistic = -1.98).

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CHAPTER 8

AID IN A DEBT DISTRESSED ECONOMY: THE CASE OF ZAMBIA

by Howard White with Tove Edstrand

8.1 Introduction

Since independence in 1964, the Zambian economy has experienced severe economic decline. Real per GDP per person in the early 1990s was about two-thirds that in the late 1960s: in 1993 GDP per capita was (in constant 1977 prices) an estimated K 245 per person, compared to K 409 in 1965 - equivalent to an annual decline of 1.8 per cent.¹

Living standards, as shown by consumption levels and welfare indicators, have also fallen. By 1993 both per capita total and private consumption had fallen to around three quarters of their value at independence: falling by 1.3 and 1.5 per cent a year respectively over the period 1965-93. Infant mortality and life expectancy are comparable to their levels at independence, having improved in the first fifteen years and deteriorated thereafter. In recent years the proportion of households below the poverty line has increased markedly (from one half in 1980 to two thirds in 1991; GRZ, 1994: 1). The only other countries to perform so poorly on social and economic indicators are those such as Mozambique and Uganda, which have been subject to years of civil conflict.

Zambia's decline has taken place despite substantial aid inflows. Though aid flows averaged only 2-4 per cent of GDP in the 1970s, they increased to an average of over 10 per cent in the 1980s, peaking at over 25 per cent. In the 1990s aid inflows have been over one

third of GDP.² In the period 1980-93 the country has received an estimated US\$ 8.5 billion of aid.

Why has Zambia fared so badly and why have such large quantities of aid been unable to reverse the decline? Indeed, what role has the aid played - has it helped to cushion the blow of economic decline or, has it, as some critics might suggest, actually worsened the situation? A key factor in Zambia's development has been the erratic path it has followed to reform, which is described in Part 8.2. Delays in implementing reform resulted in the build up of a heavy debt burden which remains as a major impediment to the country's growth. Part 8.3 both describes the growth of debt and analyses the macroeconomic effects of the inflows, utilising the accounting framework from Chapter 2. This analysis is supplemented by an application of the three gap model presented in Chapter 4, the results from which are reported in the appendix to this chapter. Part 8.4 concludes.

8.2 Macroeconomic policy and performance in Zambia

Economic policy in the years following independence

Zambian development is inextricably linked to copper. At independence copper and related mining activities accounted for 40 per cent of GDP; throughout the last thirty years copper has accounted for more than 90 per cent of export earnings. Also at independence the new UNIP government had access to increased copper revenues from a rise in the copper price and the termination of flows to the Federation. Faber estimated the effect of these changes to be an increase in government revenue of K 170 million (compared to expenditure of less than K 60 million in 1963; Faber, 1971: 303).

The higher revenues were used in part for a rapid expansion of the government sector. The number of civil servants more than doubled between 1963/64 and 1967 (from 22,511 to 51,497; Burdette, 1988: 66). Africanisation meant that the number of top-level positions rose even more rapidly - from 184 in 1962 to 573 in 1967 (Turok, 1979: 74). Wages in the civil service followed the new high levels attained in mining, following the Brown and Wheelan Commissions (Knight, 1971). It is easy in retrospect to see such expenditure increases as a

reckless spending spree. In fact the government made significant strides to improve living standards for many Zambians. Primary and secondary school enrollments rose from 378,600 and 13,900 respectively in 1964 to 858,200 and 65,800 in 1974; over the same period participation in adult education rose from 2,700 people to 60,000. There were also increases in the number of hospitals (48 to 76) and health clinics and centres (306 to 595).

The role of the state was also expanded into the productive sector. Following independence, foreign investment was welcomed, although the government also perceived a role for itself in supporting import substituting industries. Table 8.1 gives a summary of economic policies since independence. The Mulungushi Declaration in 1968, and the Matero reforms the following year, changed this state of affairs: announcing nationalisations and an expansion of the apparatus of a control economy (changes in tax and foreign exchange regulations), which were extended still further with the creation of a national bank (NCB) in 1970.

The policies in the decade following independence sowed the seeds for future problems in two ways. First, the expansion of the state sector and the scale of services provided was sustainable only if current levels of copper revenue continued into the future: they did not. Second, the parastatal sector - in which production was quite deliberately subordinated to political ends - became increasingly inefficient and incurred mounting losses.

The failure to adjust

In 1975 the copper price plummeted, marking the start of persistent deterioration in the terms of trade for some years to come. There was some recovery in the middle of the 1980s, but this improvement was reversed - so that the terms of trade have been trendless during the decade as a whole. The decline in the terms of trade translated into a substantial drop in per capita gross national income (Figure 8.1) - though the continuing decline throughout the 1980s is also attributable to poor economic performance.

What is striking about Figure 2.1 is the way in which consumption remained quite stable in the 1970s despite the drop in income. Consumption levels were maintained at the

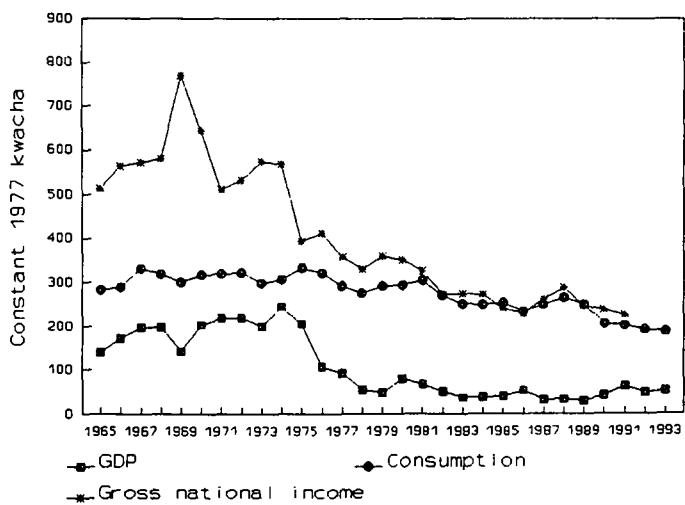
Table 8.1 Summary of Zambian economic policy

Year	Policy	Exchange rate	Fiscal and monetary policy	Trade policy	Other
1964-67	Mixed economy	Fixed exchange rate	Expansionary fiscal policy	Adopted Import Substitution Industrialisation Strategy (ISI)	
1968-74	Mulungushi Declaration announces increased role of state	Fixed exchange rate			Materno reforms (nationalisation policy)
1975-79	Regime of controls	Fixed exchange rate with occasional devaluation. Forex rationing.	Deficit financing and foreign borrowing to maintain consumption levels (including increased consumer subsidies); capital expenditure reduced.	Introduction of import quotas and licenses	
1980-82	First attempts at adjustment	Further devaluations.	Expenditure reducing policies	Protection through high tariffs	
1983-87	Stabilisation and adjustment	Further devaluation. 1985: auction system.	Wage restraint and credit squeeze.	Some trade liberalisation.	Interest rates decontrolled.
1987-89	New Economic Recovery Programme.	Fixed exchange rate and forex rationing (FEEMAC).	Price controls re-introduced.		Interest rate controls re-introduced.

Table 8.1 Summary of *Zambian economic policy* (ctd.)

Year	Policy	Exchange rate	Fiscal and monetary policy	Trade policy	Other
1990-94	Adjustment (Economic Recovery Programme).	1990: OGL introduced. 1991: official windows unified. 1992: bureaux established, exchange rate unified at market clearing level. 1993: forex sold through auction to banks. 1994: capital account controls abolished.	1991: measures to curb growth of money supply and increase resource mobilisation. 1992: auction of TBills; elimination of subsidies for breakfast meal. 1993: cash budget; tax reforms. 1994: creation of Revenue Authority.	1990: liberalised import regime, export retention and no-funds schemes; embarked on <i>tariff reform aimed at</i> a more uniform and lower tariff regime. 1992: retention rate increased to 100 percent for non- <i>traditional</i> exporters; controls on retention market removed.	1990: private trading in all commodities except mealie meal. 1992: interest rates liberalised; privatisation act.

Figure 8.1
Per capita GDP, income and consumption



expense of savings and investment (Table 8.2). If income had subsequently recovered then such consumption smoothing is a rational response to the temporary decline. Both GRZ and the IFIs did indeed believe that copper prices would recover. Furthermore, neither the IFIs nor other donors opposed the increasingly tight controls government extended over the economy in response to the crisis.

These controls were associated with increasing inefficiency throughout the productive sector. A World Bank review of the industrial sector reported that total factor productivity had declined in fourteen out of seventeen manufacturing sectors over the period 1965-80 - labour productivity fell in seven sectors despite substantial investment (1984: 16-18). The copper sector was beset by similar problems - described by Gulhati as a "spluttering growth engine" (Gulhati, 1989: 18). Following termination of the management contracts with foreign mining companies in 1973, the mining parastatal, ZCCM, was subject to the same political interference as other parastatals - expatriate employment in the copper industry fell from 10 per cent in 1971 to 3.5 per cent in 1983 (Gulhati, 1989: 19). Costs of production increased - partly because of the growing physical difficulties in mining new seams, but also because of managerial inefficiencies. Productivity fell from 12.3 tons per worker in 1973, to 11.7 tons in 1977 and 9.7 tons in 1981 (Gulhati, 1989: 19). Policy toward the agricultural sector has been subject to some debate - Andersson (1993) claims it was subject to the same discrimination as characterised many other sub-Saharan African countries, whereas Kydd (1986) claims that, unusually, GRZ did support agriculture - but only the large estates, and not the smallholders. What is clear is that the internal terms of trade have moved against agriculture and that the parastatals responsible for agriculture were increasingly unable to cope. Geisler (1991) describes the inefficiencies in maize marketing by the late 1980s and early 1990s: to cite just one example of many:

In September 1991, almost certainly as an act of protest by the local farming community, 27,000 bags of maize were set on fire in Mumbwa, having stayed uncollected for three years, allegedly because of transport problems, although the depot was only 100 km west of Lusaka on the road to Mongu. By the end of

Table 8.2 Savings and investment rates
(per cent of GDP, period averages)

	1965-75	1976-84	1985-93
Consumption	60.0	82.3	85.1
Domestic savings	40.0	17.7	14.9
Investment	31.0	19.4	14.6

Source: project database.

October an estimated 500.000 bags of maize were reported to be soaked and wasted.

(Geisler, 1991: 116)

A decade of failed reforms: the 1980s

By 1980 the need for reform was increasingly obvious and the government turned to the IMF. Zambia had drawn upon IMF funds three times during the 1970s, so that by the 1980s it had reached the upper tranches of IMF resources which are only available subject to policy conditionality. However, the Extended Fund Facility negotiated in 1981 broke down after just over a year. This was just one in a series of programmes - loans and credits from the IFIs to Zambia are detailed in Table 8.3.

A new, one-year stand-by agreement reached in 1983, marks the beginning of serious attempts at stabilisation and reform, being accompanied by important changes in personnel and the subordination of the planning office (NCDP) to the Ministry of Finance (Gulhati, 1988: 31). Targets in the stand-by covered improvement in the current account, increased government revenue and reduced expenditure (including a cap on public sector wages and employment), a general 10 per cent wage ceiling, devaluation and move to a flexible exchange rate system and meeting repayment obligations on rescheduled arrears. Neither this stand-by, nor the subsequent one in July 1984 were fully drawn down, despite what Gulhati calls "strenuous efforts" to meet the targets (Gulhati, 1988: 33).

Attempts to reverse the decline of the economy in the period 1978-85 had concentrated on expenditure-reduction (demand contraction), which could not of course deliver growth in the short-run (nor was it meant to). But whilst stabilisation is probably a pre-condition for growth (a fact that was to prove a problem in the early 1990s), stabilisation is not all that is required. In line with critique of stabilisation programmes developed by Killick *et al.* (1984), amongst others, it is difficult to see how stabilisation alone could bring about the adjustment which was required.

**Table 8.3 IMF agreements and World Bank programme
lending to Zambia, 1983-1994**

Date		Loan/credit	Completed or terminated
1973	May	IMF stand-by agreement World Bank programme loan	
1976	July	IMF stand-by agreement World Bank programme loan	
1978	April	IMF stand-by agreement	
1981	May	IMF Extended Fund Facility (36 months)	Broke down July 1982
1983	April	IMF stand-by agreement (12 months)	Not fully drawn because of debt arrears
1984	March	IBRD export rehabilitation and diversification loan	
	July	IMF stand-by agreement (21 months)	Suspended April 1985, because of debt arrears
1985	July	IDA/IBRD agricultural rehabilitation project	
	October	IDA industrial reorientation credit	
1986	February	IMF stand-by agreement (24 months)	Suspended when auction abandoned (and other conditions already not met)
	June	IDA economic recovery credit	Suspended May 1987 (auction abandoned); completed in 1991
1991	March	IDA second economic recovery credit	Completed
	April	IMF Rights Accumulation Programme	Scheduled for completion June 1995
1992	June	Privatisation and industrial reorientation credit	Completed
1993	June	Second privatisation and industrial reorientation credit	
1994	March	Economic and social adjustment credit	Scheduled for completion late 1994

The programme put together by GRZ during 1985 recognised this problem, and sought to rectify some of the major distortions in the economy - commercial interest rates were decontrolled in September, reforms planned in industry and agriculture (including subsidy reduction and elimination of most price controls) and foreign exchange arrangements liberalised in preparation for the auction. The auction was seen as the centre-piece of the reform efforts, and arguments over its effects led to the abandonment of the programme in 1987. Probably as important in relaxing inefficiencies in the forex allocation system was the legalising of "own funds" imports.

The auction, introduced in October 1985, allowed certain users of foreign exchange to bid for the foreign currency through the commercial banks on a weekly basis, provided they had documentary evidence of tax clearance and proforma invoices for imports (Bates and Collier, 1993: 407). Import licences were automatically given to successful bidders. Major traders in the market, such as ZCCM, Zambia Airways, the commercial banks, the government and government owned institutions, were excluded from the auction. In consequence, during 1986 only 22 per cent of the total value of foreign exchange transactions entered the auction system. However, the exchange rate set by the auction was important as it was used for all official transactions.

Whether the price of foreign exchange set by supply and demand in only one particular, and quite small, market segment was the appropriate rate was one source of criticism of the auction system (Wulf, 1988: 591). More generally the government was opposed to the massive devaluation which accompanied the auction - the rate rising from K 2.2 a dollar before the auction to a peak of K 21 a dollar. The government's opposition may have been based on "national pride" over the value of its currency or the more economically grounded concerns over the impact of the devaluation on the government budget (through external debt service obligations and the kwacha it had to pay ZCCM and other exporters for the forex they had to hand over). Public reaction to the auction system was also unfavourable - blaming it for the high inflation which coincided with the auction and allowing the rich to import luxury consumer items whereas essential goods became unaffordable.

The government picked up these latter arguments. For a while it preserved the auction system but actively worked against its successful operation: the governor of the Bank of Zambia was replaced with an official opposed to the auction system, confidence in the system was undermined by the government auctioning more funds than were actually available (so importers had to wait before receiving the forex), bids were published in the national press - with the implication that high bids were "unpatriotic" - and, at one point, refusing to accept bids above a certain price!

On May 1st 1987, President Kaunda announced that the auction was ended, relations with the IMF and World Bank were broken and controls reintroduced. The kwacha was revalued to a fixed rate of (to K 8 a dollar), debt service payments were limited to 10 per cent of export earnings after key imports (ZCCM, Zambia Airways, fuel and fertiliser), interest rates cut and prices set. As Colclough says, these policies "represented a return to the old regime" (Colclough, 1988: 60). The previous hiccups in the programme during the 1980s had been just that - temporary hitches that were resolved with a renewed effort on the part of government. The break in 1987 was something far more fundamental than a hiccup - the government had chewed up the programme and spat it out. Why had these well-supported reform efforts failed?

Gulhati suggests three potential causes for the failure of the 1985-87 reform programme: (i) inherent problems in programme design; (ii) insufficient support from donors; and (iii) lack of domestic commitment (Gulhati, 1989: 31). Probably no reform programme is perfect, but the 1985 reforms were certainly a move in the right direction.³ Although, Gulhati argues that the response by bilaterals to the reform effort was insufficient, Zambia did receive comparatively high levels of aid (see Part 8.3 below). Most commentators place emphasis on lack of political support for the reforms.

The causes of the lack of widespread political support for reform can be easily explained. Although undoubtedly having a wide power base at independence, support for UNIP waned thereafter. Importantly, the backing of the miners was lost in the early seventies as a rival party (UPP) grew in strength in the copperbelt. The banning of UPP in 1972 and formation of the

one-party state the following year alienated the miners altogether - henceforth the government took their views into account only insofar as there was a danger of strikes or riots. The business sector - certainly foreign, but also domestic - was also either isolated from or opposed to the Party; so that the Party was, in Bates and Collier's words "alienated from many of the most productive forces in the economy" (1993: 393).

UNIP did of course have a powerful constituency, and that was urban consumers and public sector employees. But these were the very groups set to suffer most from the reform programme. Reforms would remove consumer subsidies, and the price controls which benefitted those in urban areas who had access to these goods. Public sector cuts and elimination of subsidies would force retrenchment and restructuring in the public sector, reducing the direct and indirect income employees enjoyed. UNIP politicians, recognising these interests, themselves resisted reform; according to some observers it was Kaunda alone who agreed to the programme:

[the reforms] were extremely unpopular among nearly all strata of the population, from senior cabinet and party figures down to the unemployed urban worker... President Kaunda had to ram them through the cabinet.

(Callaghy, 1989)

Whatever Kaunda's reasons for supporting reform, they did not survive continued opposition to the programme, with the eventual collapse of the programme.

Adjustment in the 1990s

Unsurprisingly, the economy did not recover with the return to controls. Moreover, the IFIs were not eager to allow Zambia to leave the fold, so in September 1989 GRZ once again entered discussions with the Bank and the Fund. (In fact contact had been maintained through "the break", though there were no official operations). Normal relations with the Bank were resumed with the clearance of IBRD/IDA arrears in March 1991 and the IMF's Rights

Accumulation Programme (RAP) begun the following month. Both of these operations illustrate the degree of commitment displayed by donors to having Zambia resume the reform programme.

On 12th March 1991, Zambia was in arrears to the World Bank to the amount of US\$ 319 million.⁴ On that day US\$ 119 million of these arrears were cleared - US\$ 19 million from Zambia's own funds and US\$ 100 million with monies from the Donor Support Group, raised especially for that purpose. Therefore arrears remained at US\$ 200 million. The following day the Bank of England made a bridging loan of US\$ 200 million to Zambia, which was used to clear the arrears. Once the arrears were cleared the Bank released US\$ 40 million of funds held in suspense following the break in 1987 and US\$ 160 million of new IDA credits (the Second Economic Recovery Credit). These funds from the Bank - totalling US\$ 200 million - were repaid to the Bank of England. The whole circular transaction is reported to have taken 72 minutes!

The RAP is a rather similar trick carried out over a much longer time period. Since Zambia is in arrears to the IMF it cannot draw any funds, thus cutting the country off not only from a potentially important source of finance but also, more importantly, apparently removing the possibility of an IMF programme which the World Bank, bilateral donors and commercial organisations regard as a prerequisite for much of their own involvement. The RAP simultaneously overcomes not only this difficulty but also manages to - in all but name - reschedule the IMF debt. The agreement extends beyond the restoration of IMF drawings, as bilateral donors in the Support Group are then intended to make OGL grants equivalent to Zambia's scheduled repayments to the Fund.

In order to "stay on the RAP", Zambia has to meet with policy conditionality of the type which normally accompanies adjustment programmes - the fact that the government has failed to do so in important respects is discussed below - and stick to an agreed programme of settling arrears on external debt. So long as these requirements are seen to be met then Zambia accumulates the "rights to borrow" the monies it could have borrowed if it were not for being in arrears to the Fund. By 1995 the value of these rights will be equal to the value of the

outstanding IMF arrears. At that point, a bilateral donor is expected to make a bridging loan of an equivalent amount to Zambia, which then uses these funds to pay off the arrears. Once the arrears are cleared the accumulated rights are paid over to Zambia, who uses them to repay the bridging loan to the donor. Zambia still owes the same amount to the IMF - but now it is new debt, not arrears, so the debt has effectively been rescheduled.

The conditionality attached to the RAP may be divided into three areas: (i) ceilings on reserve money and domestic credit creation; (ii) various financial indications, including reduction in debt arrears; and (iii) policy changes to liberalise the foreign exchange and credit markets (Adam *et al.*, 1993). GRZ has made rapid strides in liberalisation. Indeed, at the March 1994

**Table 8.4 Benchmarks and outturns for IMF
reserve money targets (K million)**

		Benchmark	Adjusted benchmark	Actual
1992	Quarter 1	22,648	-	22,899
	Quarter 2	23,711	-	27,310
	Quarter 3	28,889	26,247	32,808
	Quarter 4 ¹	30,551	37,533	36,660
1993	Quarter 1	40,732	-	60,001
	Quarter 2	41,546	47,906	64,073
	Quarter 3	70,656	-	73,208
	Quarter 4	76,398	80,791	87,475

Notes: - none

¹First column in adjusted benchmark and the second modified.

Source: Andersson (1994: 6-9).

CG meeting in Paris. Mr. Stephen Denning, director of the World Bank's Southern Africa department, said, "it's difficult to find a country that's done more" (quoted in *Financial Times*, 26/3/94). But there have been problems - slippages in reduction of arrears (though these may be attributed to shortfalls in donor finance) and, more significantly, very substantial overshooting of monetary targets. Table 8.4 summarises the reserve money targets and outturns on a quarterly basis for 1992-93; the outturn has overshoot the benchmark in every case.

This excessive monetary growth has meant that inflation has been much higher than expected, and in fact accelerated rather than decreased. Already in 1991 reserve money had grown at 88 per cent over the year rather than a target of around 25 per cent. Although no rights were accumulated in that year, the programme was not discontinued, and the rights which had been missed in that year were distributed over the remaining years. The IMF has continued to accommodate slippage: revising targets upward in line with actual performance. Whilst reasons may be found to explain each of these slippages it is clearly true that until the middle of 1993 - when monthly inflation reached an annualised rate of nearly 300 per cent - the government had failed to stabilise the economy.

In order to control monetary growth, GRZ introduced a cash budget in January 1993. However, the design of the scheme did not prevent the government from making unsterilised purchases of forex for ZIMOIL imports and external debt requirements so that rampant money supply growth and inflation continued in the first part of the year. These "loop-holes" were plugged and the government pushed up the nominal rate on 28 day TBills in a further effort to restrict monetary growth.

In July the rate on TBills was 9.8 per cent a month - equivalent to 208.5 per cent a year. But in July inflation was running at an annualised rate of 285 per cent, so the real interest on the TBills was negative. This situation was sharply reversed the following month when inflation dropped to an annualised rate of 34.5 per cent. Given the nominal annual return on TBills of 180 per cent the drop in inflation turned TBills into a very desirable asset. In August the monthly return on a dollar investment (i.e. adjusting for exchange rate movements) was 17.9 per

cent. These returns had the desired effect, with monetary growth and inflation both plummeting (the price level actually fell in November). As investors switched into kwacha the exchange rate appreciated - falling from around K 570 a dollar in July to K 370 a dollar in October. Whilst stabilisation has been achieved, if it can be sustained by this trick of "Ponzi finance" (a term also used by Adam *et al.*, 1993) must be open to doubt.

Summary and conclusion

Zambia's post independence strategy shared common elements with many other sub-Saharan African countries - increasing the role of the state and creating a manufacturing sector with considerable state support. The difference in Zambia was that it was rich enough to afford it at the time. Economists studying "patterns of growth" would expect the share of manufacturing in GDP to rise with income. Zambia has an economic structure which may have been appropriate if the country had continued to grow at the rate experienced in the late 1960s, but which seems wholly inappropriate for a country at its current income level. For its level of income, Zambia is the most industrialised country in the world (see White and Edstrand, 1994:24-5). Manufacturing and services have accounted for most of the growth in the Zambian economy since independence. But growth in these sectors is not sustainable as it was based on the wealth of the mining sector; and mining has been experiencing an average decline in output.

Donors have lent considerable support to reform in Zambia, despite the wavering commitment of government itself to the reform programme. The extent and content of reform has been strongly influenced by donors. But although the liberalisation measures undertaken may be "steps in the right direction", a vision of what that direction is missing. If there is an economy in dire need of adjusting the very core of its structure, then Zambia is that economy - neither donors nor government appear to have fully grasped this point.

8.3 The macroeconomic effects of aid

The accounting framework presented in Chapter 2 is a useful starting point for raising questions about aid's macroeconomic impact. As explained in that Chapter, the traditional view is that aid is used to finance imports and investment. What is most striking from the Zambian data is

that domestic savings have usually been sufficient to cover investment (Figure 8.2) and the export earnings are high enough to pay for imports (Figure 8.3). Given that by imports and investment are largely financed from domestic resources we would not expect the behaviour of these variables to be follow changes in aid inflows.

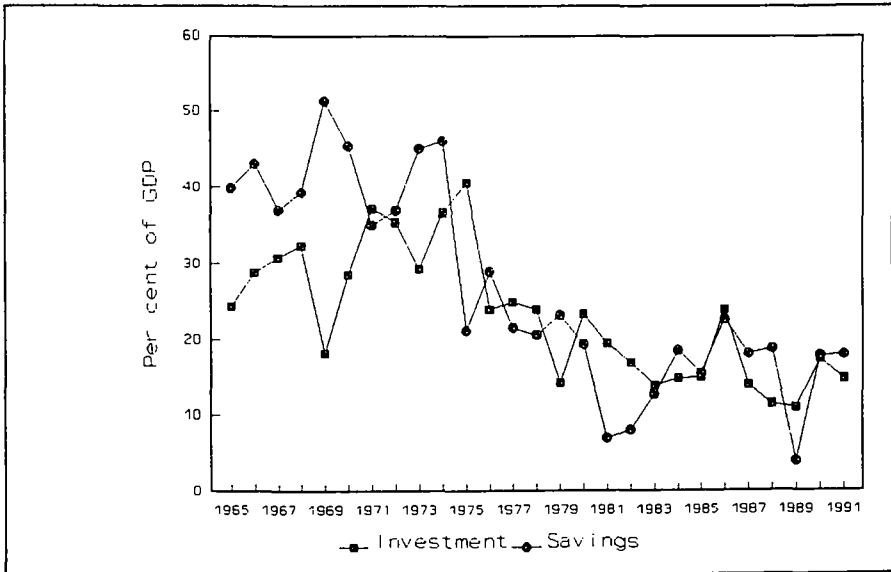
This supposition is correct. In fact, imports have fallen as aid has risen. Econometric analysis shows the capacity to import to be the main determinant of import levels - and the decline in this capacity as the terms of trade have fallen has been mirrored by lower imports. Figure 8.3 showed that the current account (excluding official transfers and interest payments) has been negative, requiring an inflow to cover this gap. But aid inflows have been a much higher per cent of GDP than required to fill this gap - implying that the majority of the inflow has been used to finance capital outflows (amortisation) and interest payments on debt.

The debt problem

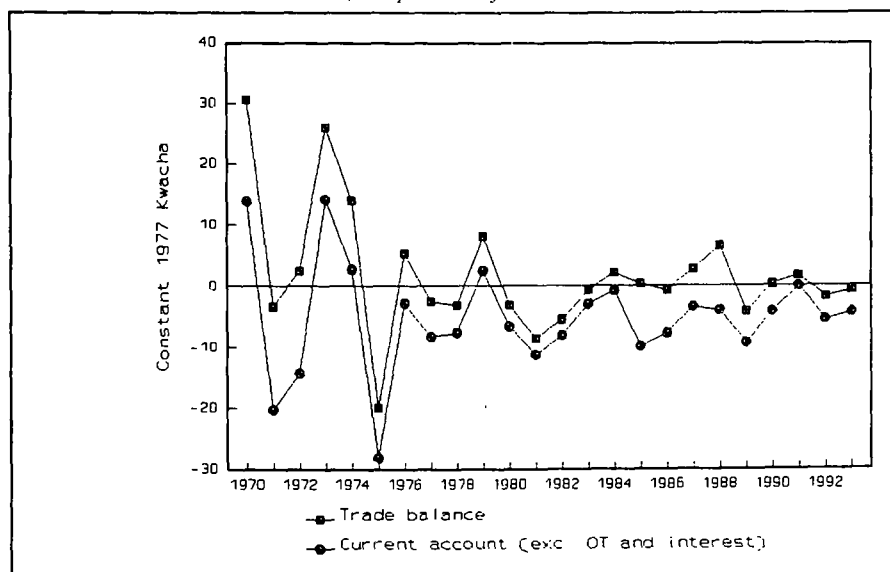
Zambia's total external debt has risen steadily from around US\$ 650 million in 1970 to over US\$ 7.2 billion by 1991. But, as shown in Tables 8.5 and 8.6 this growth has masked some significant changes in the underlying composition of the debt stock. Most notably, the share of debt from private creditors has fallen from nearly two-thirds to around 10 per cent of total external debt. Official funds now account for the bulk of the debt. Although non-concessional official flows account for more of the debt than do concessional, the value of concessional inflows and grants greatly exceeds non-concessional inflows.

The private debt relates largely to borrowing in the 1970s - including in the second half of the decade when inflows were used to support consumption levels. In the early 1980s Zambia relied heavily on IMF and, to a lesser extent IBRD, funds - neither of which are concessional. Since the accounting identities suggest that new inflows were in large part used to meet debt obligations, these inflows were recycling debt from private to official creditors. Since the mid-1980s Zambia has enjoyed access to more concessional funds - IDA credits rather than IBRD loans and mostly grant finance from the bilaterals. These funds represent a further recycling, with some dilution, of the total debt.

*Figure 8.2 Savings and investment
(as a per cent of GDP)*



*Figure 8.3 Trade balance and current account
(as a per cent of GDP)*



**Table 8.5 Composition of Zambia's external debt
(per cent of total debt)**

	1970-75	1976-80	1981-85	1986-91
Concessional	21.7	21.9	26.3	28.5
o/w Multilateral	4.5	1.9	3.2	8.3
Bilateral	17.2	20.2	24.7	21.2
Non-concessional	10.9	18.6	24.3	28.6
o/w Multilateral	7.5	11.2	10.3	10.4
Bilateral	3.4	7.4	14.0	18.2
Private	61.9	28.3	15.6	9.0
Short-term - borrowing	0.0	19.7	12.8	12.2
Short-term - interest arrears	0.0	0.2	2.0	7.9
Use of IMF credit	5.5	11.3	19.0	13.7
Total	100.0	100.0	100.0	100.0
Memo item:				
Total debt (US\$ millions)	872.3	2,551.5	3,899.8	6,740.8

Note: total debt is the average annual total external debt for each period.

Source: *World Debt Tables*

Table 8.6 Gross inflows (US\$ millions)

	1970-75	1976-80	1981-85	1986-91
Concessional	48.6	81.5	109.3	128.6
o/w Multilateral	5.1	2.9	38.3	91.3
Bilateral	43.5	78.6	71.0	37.3
Non-concessional (official)	33.9	62.2	64.3	45.5
o/w Multilateral	22.2	47.1	48.9	40.8
Bilateral	11.7	15.1	15.4	4.8
Private	179.3	168.8	90.1	69.8
Short-term	0.0	0.0	23.8	100.2
IMF purchases	25.4	100.4	159.7	20.3
Grants	7.3	42.6	86.1	367.5

Note: grants exclude technical assistance.

Source: *World Debt Tables*.

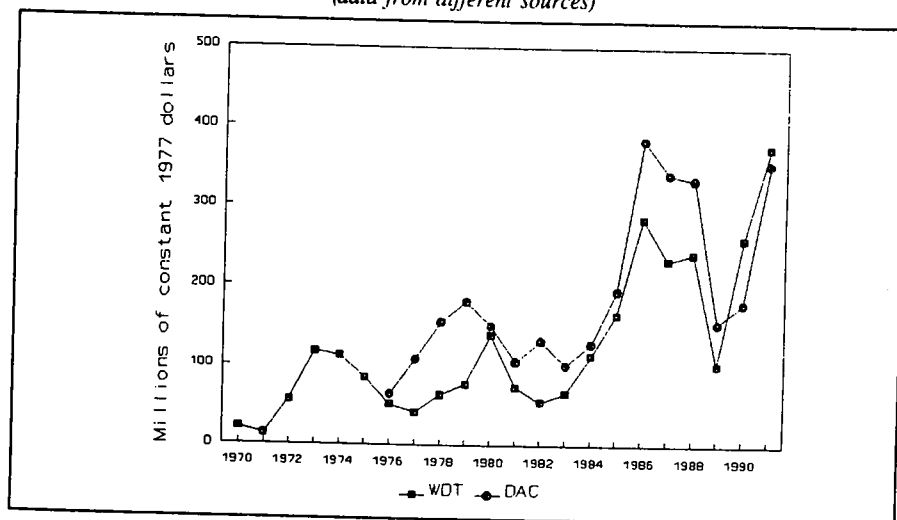
Aid and adjustment

The pattern of real aid inflows is shown in Figure 8.4. This pattern fits quite closely with the story about policy changes. As the crisis deepened a first aid boom was experienced up until 1980. But 1980 was the year the Bank launched structural adjustment, and donors appear to have mostly responded to the absence of a programme in Zambia by reducing their aid levels. The response to the 1985-87 adjustment effort was very marked, as was the withdrawal of funds after it was abandoned. Resumption of adjustment, combined with multi-party elections, have made Zambia again a favoured recipient in the 1990s. This favoured status is reflected also in the terms of long-term capital inflows: the grant element averaged 46.7 in 1985-87, falling to 22.6 in 1988-90 and rising again to 76.2 per cent in 1991-92 (*World Debt Tables*, 1994).

Not all donors have responded in equal measure to Zambia's erratic policy performance. We calculated real gross aid inflows from the major donors to Zambia in four periods: 1980-84, 1985-87, 1988-89 and 1990-91. Donors supportive of reform are those whose aid rose in the 1985-87 period, fell back in 1988-89 and picked up again in 1990-91. Using this definition of support four categories may be identified: (i) donors who are strongly supportive of the reform process (i.e. those whose aid rose during both reform episodes and declined in real terms between episodes): IDA, Sweden, UK, US and the Netherlands; (ii) donors who are moderately supportive of reform (i.e. those whose aid rose during reform, but also experienced a moderate growth between reform periods): Germany and Canada; (iii) donors whose aid does not support the reform process (i.e. those whose aid rose with initial reform, continued to grow - albeit at a slower rate - between reform periods, and has declined during the most recent reforms): Japan, Norway and EC; and (iv) donors whose flows move against the reform process: aid from UNDP fell during the first reform period, rose during the break with the multilaterals and has registered an insignificant change during the most recent reform period.

Despite these variations, the overall pattern shows movements which are consistent with the argument that overall aid finance has supported adjustment - Zambia has been rewarded for reform and punished for not reforming. Bilateral donors have also been keen to support Zambia

*Figure 8.4 Real aid inflows
(data from different sources)*



in the 1990s in order to maintain political reform. Others have argued that aid in Zambia has been so generous as to mitigate against reform. For example, speaking of the late 1980s, Good argued that:

Zambia's acute malaise is a consequence of chiefly internal factors... As things stand, debt concessions and additional foreign aid would worsen rather than improve the situation, since it would strengthen and encourage an inefficient and authoritarian regime without bringing benefit to the majority of the people.
(Good, 1989: 298)

Speaking of aid to Zambia more generally, de Vlyder writes:

Zambia has probably received more policy-related assistance than any other African country (with the possible exception of Tanzania). But it is certainly not the best pupil in the class that has been rewarded....

... countries such as Zambia, Mozambique and Rwanda, classified as poor performers [by the World Bank], to which aid disbursements, not least from the IFIs, have been huge.

(de Vlyder, 1994: 19 and 20)

Good's statement is not incompatible with the view that donors have supported reform. Donors pushed for reform in the mid-eighties, but the programme was abandoned because of internal opposition. Further support at that time would indeed have postponed the return to reform - but, in fact, many major donors reduced their support. The commitment of UNIP under Kaunda to sustained reform must be questioned - but the increased inflows in 1990 (which were subsequently suspended until MMD came to power) were in the context of a changing political environment which promised the possibility of genuine policy change.

Zambia has received large levels of support - in the 1990s three times the average in per capita terms for sub-Saharan Africa as a whole. The amount of aid received by Zambia is determined by its financing gap, which consists of debt obligations. If donors are to support Zambian reform they have to accept that they must contribute to these obligations - failure to do so will mean that Zambia reneges on its debt obligations, rendering it ineligible for an IMF

(and therefore World Bank) programme. Simulations using the three gap model presented in Chapter 4 show that Zambia's future growth will continue to be tightly constrained by foreign exchange availability, and that the forex donors make available must continue to mostly be in the form of balance of payments support. The position of de Vlyder is that the government would have been forced to undertake more consistent reform in the absence of aid. In the end, it is not possible to construct this counterfactual - but there is no evidence from elsewhere in sub-Saharan Africa to support the view. It seems more plausible that funds are needed to support and cushion the costs of restructuring. The view that aid in Zambia has positively supported reform is an important part to a discussion of the overall macroeconomic effects of that aid.

Econometric analysis

Time series analysis must be wary of spurious results from regressions of non-stationary variables. Of the 34 variables in the dataset, only one was stationary at the 5 per cent level. Therefore consistent estimates can only be obtain for sets of variables which are cointegrated - however, such sets of variables cannot be found for some major macroeconomic aggregates, such as savings. A further limitation of the analysis is the absence of data giving a functional breakdown. We have an idea of overall trends, and the Bank of Zambia have some data back to the mid-80s, but we do not have consistent series which may be used in econometric analysis. Table 8.8 reports those results which were obtained.

Although it is not possible to get consistent estimates for aggregate investment - results can be reported for disaggregated investment. Private investment includes the parastatal sector. The equation supports the view that investment has been constrained by lack of foreign exchange, as imports are the main determinant of both government and private investment. Aid is a significant determinant of private investment (of which the largest part will be parastatals), but not government investment. The non-availability of data on disaggregated aid mean that changes in the composition of aid may be drowning out the effects that the different types of aid have.

Table 8.8 Econometric estimates

	M	AID	OK	GR	TOT	GROW	PHA T	X	GDP	I	C	MIVA	NMGDP
IP	0.57*	0.84*	-0.18	-	-	x	x	-	-	-	-	-	-
IG	0.49*	0.29	0.07	-	-	x	x	-	-	-	-	-	-
CGTK	-	-0.12	0.76	0.40	-	-	-	-	-	-	-	-	-
MK	-	-	-	-	3.20*	-	-	1.20*	-	-	-	-	-
MK	-	-	-	-	1.07*	-	-	1.00*	-0.94*	0.67*	0.81*	-	-
GR	x	x	x	-	x	-	-	x	-	-	-	1.20*	x
PHAT	-	0.003*	-0.001*	-	-	-1.69	-	-	-	x	x	-	-

Notes: - not included in regression; x included in regression but insignificant or not cointegrated. IP: private investment; IG government investment; CGTK government consumption and transfers; MK imports; GR government current revenue; and PHAT inflation.

Since the investment equation shows investment to be determined primarily by imports, an indirect effect of aid on investment might be expected through aid's effect on imports. In fact it is not possible to find a significant impact from aid on imports. The negative impact of aid on imports shown by the simple regression is not robust to alternative specifications: but there is no significant relationship either way. Exports and the terms of trade are the significant components. Two import equations are reported - one for forex availability only and one containing import demand elements (see Moran (1989) for the theoretical derivation of hybrid import functions). On the basis of an F-test the simpler equation is not a valid restriction of the more general specification - but the simpler equation appears cointegrated with 99 per cent confidence, whereas the more general one is only so with 90 per cent confidence.

The government sector more generally was not amenable to modelling - in particular to address the issue of the fiscal response of GRZ to aid inflows. Government revenue is primarily a function of mining value added (the coefficient surprisingly exceeding unity in all specifications). There is no evidence of reduced government revenue collections as a consequence of the aid over the period as a whole (or with various structural breaks allowed for). Conversely government consumption and transfers depend most significantly on other capital inflows - not appearing affected by the aid inflows.

Although no estimable equations were found for the real exchange rate, one was found for inflation. Aid appears to exert a positive impact (but other capital flows a negative one). The negative coefficient on growth can be interpreted as representing the effect of increased supply - although this explanation is not entirely convincing as measured GDP of course represents both supply and demand (so this interpretation assumes supply to be a binding constraint with quantity adjustment of demand).

Not shown in the table was the estimation of the simple Harrod-Domar equation: from which the ICOR was found to be 16.67. But, as might be expected, the regression did not appear a terribly good one. Some other results did not stand up to more rigorous econometric analysis, but which may be of interest for further work, were the clear negative correlation

between agricultural value added and the domestic terms of trade and the positive coefficient (0.8) from the regression of debt service on aid.

The reason so few equations could be estimated is likely to be parameter instability. Regression of one variable on another assumes that the relationship between the two is constant across time. For a variety of reasons this assumption may be invalid. Usually the problem of structural instability can be dealt with through the introduction of intercept and slope dummies, as has been done in the Zambian data for, for example, before and after the fall in copper price. But the problem in Zambia has been that the country has not simply moved from one regime to another at a certain point of time, rather it has frequently switched policies, especially throughout the 1980s. This behaviour will induce instability in economic relationships to a degree which makes it difficult to model them econometrically.

The behavioural impact of aid

As mentioned above, it has proved difficult to model Zambian savings. The main fact of Zambian savings was clear in Part 8.2 - they fell as consumption levels were maintained in the face of dramatically reduced income. The econometric results suggest that consumption levels were supported largely by other capital flows, not by aid. Living standards had begun to fall by the time aid flows became really significant. On the side of government revenue it has not been possible to find an effect from aid. But this is not to say that donors are not legitimately concerned by the current decline in the tax ratio (which has fallen every year since 1990). Even if the point cannot be demonstrated econometrically, it is difficult to believe that GRZ would have allowed such a fall in the absence of the high aid levels Zambia has enjoyed in these years.

Chapter 2 argued that analysis of the determinants of investment should consider public and private investment separately. This point of view is borne out by the econometric results, which find non-spurious estimates for disaggregated investment, but not for aggregate. Investment is primarily determined by imports, although aid has had a significant positive impact on private (including parastatal) investment.

To understand aid's total impact on investment therefore requires knowledge of how aid has affected imports. No significant impact of aid on imports can be identified econometrically. But econometric techniques cannot capture the counterfactual where the policy reactions of government and attitude to debt obligations in the absence of aid have not been modelled. We have argued that, in the absence of the adjustment programme, GRZ would meet some (around one third) but not all its debt obligations (White and Edstrand, 1994). Since the aid pays for all these obligations at present, the absence of the programme (and therefore of balance of payments support) would reduce forex availability for imports - with consequent adverse effects for investment. In addition to the effects through debt service, adjustment policies are gradually putting into place a policy environment conducive to private investment.

Cross-country analyses of the effects of adjustment programmes (e.g. Mosley *et al.*, 1990) have argued that adjustment policies have an adverse impact on investment - yet we are arguing the reverse. Much of the analysis of such studies is based on techniques which are methodologically quite shaky (White and Luttik, 1994: Chapter 2). (Such as before versus after comparisons - in the case of Zambia, such comparisons show the investment rate to improve with adjustment, compared to surrounding years of non-adjustment). The reasons underlying the supposed adverse impact on investment are (i) reductions in government investment; (ii) the time needed to create the confidence and environment favourable to private investment. In the Zambian case, adjustment has not been associated with lower government investment, compared to the low levels of the 1980s. Given that non-adjustment policies have exacerbated the forex shortage this fact is hardly surprising.

The positive impact that aid may have on investment in Zambia does not, therefore, run through the straight-forward supplementation of domestic savings, as in the two gap model. Rather the argument must be based on the actions of the Zambian government in the absence of the aid programme. In the absence of high aid levels the government would: (i) not implement the full adjustment programme; and (ii) have to meet debt service obligations from its own resources; hence having direct and indirect adverse effects on investment.

Have Dutch disease effects from aid had an adverse impact on export performance? It was reported above that no relationship between aid and the real exchange rate can be found econometrically. But given the problems of estimating relationships in the presence of the policy instability of the Zambian economy we must devote further attention to the issue.

It was shown above that changes in the capacity to import are the main source of variation in import volume. Changes in the capacity to import are equal to the sum of changes in real exports and the terms of trade - it is the latter which has been the more important of the two. Against the large movements in the exogenously determined terms of trade, export volume has remained relatively constant throughout the period. Whilst the terms of trade are exogenous they can be affected by the exported by changes in the composition of exports. A country facing such poor price prospects as Zambia is clearly well advised to diversify its export base: this Zambia has manifestly failed to do. What may have been the role of aid in the copper sector and attempts to diversify?

Copper exports will not be particularly sensitive to the real exchange rate as the sector's revenue and a substantial part of its costs are denominated in dollars. To the extent that there are local costs then devaluation (in excess of increases of local costs) will increase the sector's profitability - for example (and most importantly) by falls in real wages. It is more debatable whether these changes in profitability will have any impact on output. Historically, these potential profits have been consumed through inefficiencies and the expansion of ZCCM into non-mining activities. On the other hand one can imagine some relationship between the RER and copper output at present, since the government is dependent upon foreign investment for the planned investments in Konkola Deep which are necessary if copper output is not to fall toward the end of the decade as existing mines are exhausted. There must be clear profits to be made to attract this investment. Of course external factors - the copper price and world demand - are probably more important in determining how profitable these investments will be. Hence, avoiding overvaluation may have some impact on the prospects for the copper sector, but is not likely to be an important influence of export performance on a year-to-year basis.

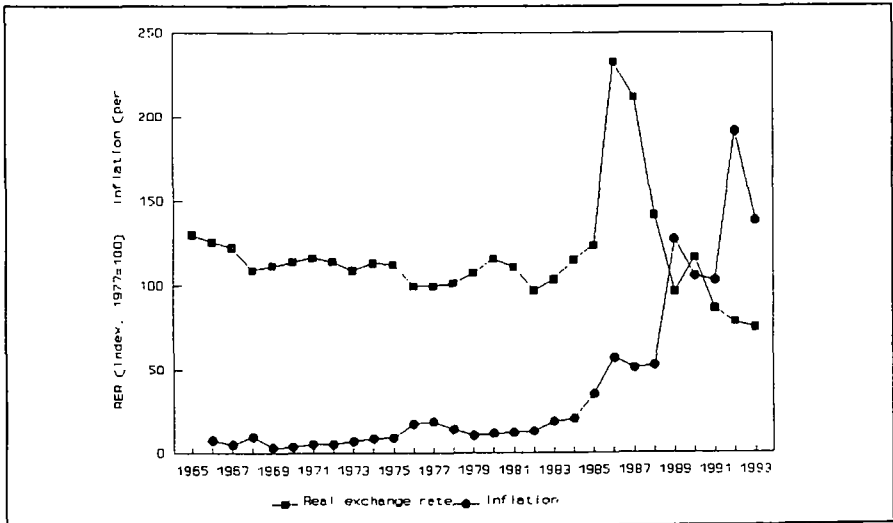
The same is not so for non-traditional exports, the production of which can depend crucially on relative prices. Although government-sponsored import substitution is unfashionable these days, small-scale import substitution may be another important result of real depreciation. The liberalisation of trade and foreign exchange transactions has resulted in a flood of goods, particularly from South Africa and Zimbabwe - including items such as cooking oil, biscuits and sweets. There is potential for meeting demand for these items within Zambia - as well as demand for a diversified range of foodstuffs, such as fruit and vegetables. Real depreciation - by raising the relative price of imports - will switch demand to domestic production. Therefore if aid does affect the real exchange rate, it will influence the trade balance through this channel.

Although no direct relationship between aid and the RER was found, aid was found to have an inflationary impact. If the nominal exchange rate is fixed then - since changes in foreign prices are exogenous - aid's impact on inflation is equivalent to exerting pressure on the RER to appreciate. But the nominal rate is not fixed - rather it has been depreciated quite substantially as a part of the adjustment programme. There are thus two competing pressures from aid: the aid-monies cause a real appreciation but the aid-supported policies result in nominal devaluation, creating a tendency for real depreciation. Which of these two pressures has the balance?

Figure 8.5 shows the index of the RER and the rate of inflation. The RER showed a trend appreciation until the devaluations of the early 1980s, and then depreciated very markedly with the introduction of the auction system. Following the abandonment of the auction system in 1987 the RER appreciated back to its former level in 1988/89. The return to adjustment caused a mild real depreciation in 1990, but the subsequent high inflation has meant an appreciating real exchange rate over the period 1990-93. What can be concluded from these trends?

Clearly in the mid-eighties the auction resulted in such massive nominal depreciation that even the high inflation of that time did little to prevent the very substantial real depreciation. The auction was clearly a policy supported by the donors - it is not one that the government

Figure 8.5
Real exchange rate and inflation



would have adopted in the absence of donor insistence. In this instance, then, the effects of the aid-supported policies overwhelmed any inflationary impact which the aid monies may have had.

In the 1990s the story is more complicated as the high inflation has offset the devaluation of the nominal rate to cause a real appreciation. It is not the case that the aid is responsible for all of this inflation. On the other hand - is the adjustment programme responsible for the inflation? The answer to this question, surprisingly, can be yes for three reasons. First is the failure to enforce the monetary targets. Second, the monetary targets have not been met in part because the programme has obliged Zambia to meet repayment obligations but donor funds to help meet these obligations have fallen below expectations. Third, since nominal devaluation will be inflationary (because of both final consumption of imports and use of imports in production), nominal devaluations do not result in an equivalent real depreciation: they will be offset by the inflation caused by the devaluation itself. If some propagation mechanism (such as wage indexation) allows the initial price increase to spark of an inflationary spiral the impact of the nominal depreciation on the RER will be further whittled away over time. But it is only under extreme assumptions that the inflationary effects attributable to the nominal devaluation can totally reverse the effects on the RER. There is something in each of these arguments. But the first two do not really add up to a case that adjustment has caused the inflation.

To sum up, there is evidence that aid may have an inflationary impact, hence creating pressure for appreciation of the real exchange rate. Offsetting this pressure, have been the substantial nominal devaluations which would not have occurred in the absence of the aid - these policy effects of aid outweigh the inflationary impact of the aid monies, so that the total impact of the aid is toward real depreciation.

If aid has a positive impact on the level of investment then increases in output should follow. Historically the productivity of investment has been low (and donors must accept responsibility for this) - but the move to market allocation of resources and public sector reform should improve efficiency. Aid for import support should stimulate activity and the use of

existing capacity. The combination of aid monies and aid policies should therefore have a positive impact on supply

8.4 Conclusions

In the three decades since achieving independence Zambia has experienced an economic decline which is practically unparalleled. This decline has occurred despite the large copper wealth the country enjoys, which yielded considerable revenue to government in its first ten years, and substantial aid inflows since the mid-eighties. It is difficult to escape the fact that a very large part of the blame for this disastrous performance must rest with economic mismanagement and the corruption which seeped through the system. The application of price controls and subsidies have created an inefficient manufacturing sector, out of all proportion with the country's level of development, and stunted agricultural development.

The Zambian problem is one of Dutch disease, because of the extreme difficulty it has faced in adjusting to the sharp decline in the terms of trade in the mid-seventies. The government smoothed consumption as if this price change was a temporary one - which it was not. Real consumption was maintained by borrowing and cutting investment (which has never recovered). Zambia thus entered the 1980s with a large debt. The debt made adjustment difficult - but the postponed, half-hearted and sporadic adjustment efforts which characterised the 1980s only worsened the problem. Far reaching reforms have been enacted in recent years, but the process of restructuring the Zambian economy is barely begun.

Aid's role in all this has been far removed from the conventional view enshrined in the two gap model. Essentially Zambia used official non-concessional monies to repay borrowing from private creditors and is now receiving grants and concessional funds to repay these non-concessional debts. Aid inflows have thus for the most part been a large-scale debt rescheduling device, and helped with a gradual reduction in the debt. The Zambian economy is not currently able to pay debt service and is not likely to be so for many years to come - unless a large part of the debt is written down. In the absence of a debt write down, donors must be committed to providing very substantial amounts of balance of payments support to Zambia for the

foreseeable future. If these funds are not provided, the country will be unable to meet its debt obligations and will, in all likelihood, restore some of the controls which have been removed. Under such a scenario the prospects for the standard of living amongst Zambians are very poor indeed.

Appendix to Chapter 8

Application of three gap model

The three gap model presented in the appendix to Chapter 4 is here applied to an examination of the prospects for the Zambian economy, using projections submitted by government to the March 1994 Consultative Group Meeting (GRZ, 1994).

Data and model calibration

The government's projections of inflows (which are broken down according to the functional classification used in the model) and debt service are used as the exogenous values. The base year is 1992 and preliminary data on copper output are used. Given depletion of reserves, considerable investment (both rehabilitation and development of Konkola Deep) in the sector is required just to maintain production levels. The government's projections show required imports for the copper sector and copper exports, the former figures is used to estimate sectoral investment. Output is held at its 1992 level.

The price index is set at 100 for 1992, as is the exchange rate index. However the exchange rate index is based on actual values of the exchange rate for 1992 to 1994 (estimated), after which the rate is assumed to be stabilised (which is in fact unlikely given the high levels of inflation predicted by the model for the next few years, but the exchange rate is left as an exogenous variable). In 1993 the Zambian government adopted a cash budget (i.e. no expenditures are made unless the revenue to finance them has been collected), so that a PSBR of zero is assumed in forecasting the fiscal constraint.

Calibration of the model is difficult for four reasons. First, the model is a stylized one. Some parts of the economy (e.g. the monetary sector) are left out altogether. Other exogenous factors (such as weather conditions) are excluded, which is allowable for modelling purposes but not permissible for parameter estimation. Second, estimation of non-spurious regressions is difficult for many variables in the Zambian economy because of the frequent regime changes (see above). Third, we are anyhow concerned to analyse future prospects of the Zambian economy not past performance. It is to be hoped that many of the structural parameters of the

economy are changing with the current adjustment programme. For example we use the government's projected 10 per cent annual growth in non-traditional exports, a figure which is certainly not supported by analysis of past trends. Parameters are therefore assigned both by reference to past experience and estimates based on assumed structural shifts (such as higher rates of implied revenue collection than has historically been the case). Fourth, we have not been able to obtain disaggregated aid data over as long a period as had initially been hoped.

Two sets of simulations are shown. GRZ's paper shows a financing gap (of, on average, around US\$ 300 million) each year from 1994. The simulation shown in Figure A.8.1 assumes the gap is not filled. In Figure A.8.2 the gap is assumed filled by aid money; these funds are taken as two thirds project assistance and one third import support. (The financing projections include DFI which has been added into capital aid in the simulations; the former is about one third the latter. Changes in reserves and short-term credits are negligible and have been excluded from the analysis).

In both simulations the binding constraints are trade and demand - the trade constraint being that from lack of intermediate imports. However, if the financing gap is unfilled then the demand constraint is only temporarily binding (1994), with demand rising thereafter. The model shows the economy to suffer a period of decline before growth picks up at the beginning of next decade. If the gap is filled then the demand displacement effects of import support aid cause the demand constraint to be binding until 1998 (although marginally so for the last three years). Thereafter the lack of intermediate goods holds back the level of output.

The simulations show capacity utilisation to remain well below unity for the next decade - strongly suggesting that the emphasis should be on rehabilitation rather than the creation of new capacity. However, import support aid has demand displacing effects which may also constrain the level of output. One possibility is to prefer commodity assistance (tying the aid to specific commodities - e.g. fertilizer - or using a positive list) to the more untied forex which flows through Open General Licence (OGL) systems. Some donors have this preference since they believe that OGL systems allow aid money to be used for luxury consumer items. However,

Figure A.8.1

Constraints on Zambian growth Financing gap unfilled

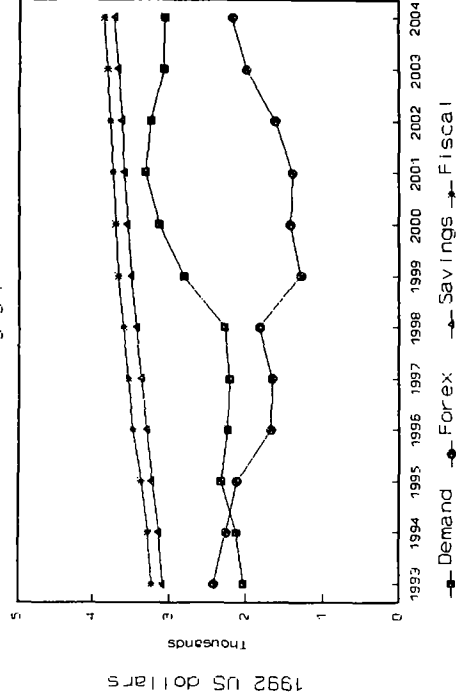
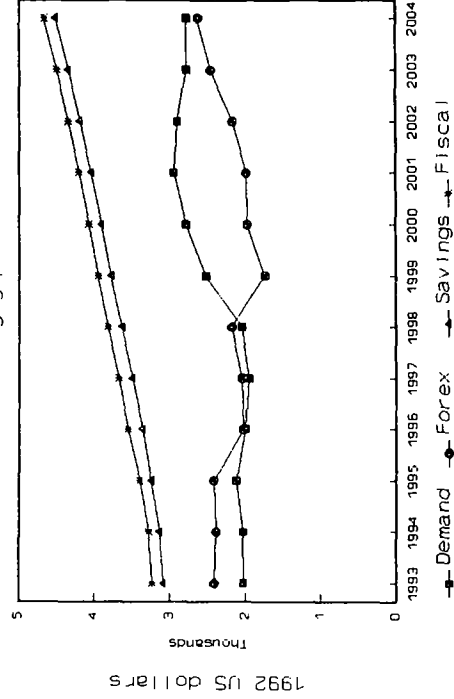


Figure A.8.2

Constraints on Zambian growth Financing gap filled



data from Zambia's auction in the mid-eighties show that a large part went to the import of intermediate goods (White and Edstrand: Chapter 4).

The final scenario is that aid levels are reduced. Above it was argued that if aid were reduced Zambia would be unable to meet the country's debt service obligations and that the reform programme would not be fully implemented. The growth prospects under such a scenario are dismal.

Acknowledgement

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Notes to Chapter 8

1. Unless otherwise stated, data are from a project database constructed mostly from national sources (in particular CSO *Monthly Digest of Statistics*).
2. These figures are inclusive of debt relief. It can be argued that debt relief should be excluded from such calculations as it relates to past flows.
3. Of course, authors attributing mainly external causes to the crisis would dispute this statement (see, for example, Clark and Allison, 1989)
4. The details of this transaction are taken from Faber (1992: 211-12).

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PART III**SYNTHESIS**

CHAPTER 9

WHAT HAVE WE LEARNT ABOUT AID'S MACROECONOMIC IMPACT ?

Rob Vos and Howard White

9.1 Introduction

What can be learnt from the different country studies? Has aid contributed to economic growth? Have aid inflows been able to alleviate foreign exchange constraints or have they been detrimental to export performance and spread the virus of Dutch disease? Has aid promoted domestic savings and investment, or has it substituted domestic resources for foreign ones? What has been the influence of the policy environment in determining these effects or to what extent have aid flows directed domestic economic policies in particular directions?

In this chapter the experience of the four countries is compared, focusing on these central questions. In all cases aid has visible macroeconomic importance, but at the same time the country conditions are quite diverse, as is the complex relationship between aid and the macroeconomy. Generalizations are not possible from such a small country sample, especially if the cases give a diverse picture. Nevertheless, the country studies give fairly detailed and useful insights in the channels through which aid inflows affect the macroeconomy. These insights allow us to recommend how the potential effects should be assessed and which are the consequences for the way in which donors should provide official development assistance.

Part 9.2 discusses the effects of the aid money on external and internal balance. The effects of aid-supported policies are discussed in Part 9.3. Part 9.4 concludes with some policy guidelines.

9.2 Macroeconomic effects of aid monies

Changing patterns of aid flows

The pattern of aid flows to the four countries has been somewhat different in each case. Guinea-Bissau received little outside aid prior to adoption of market oriented reforms in 1983. Likewise, Nicaragua received aid from the socialist bloc and some Western donors under the Sandinista regime, but not on anything like the scale which has been enjoyed since the new reforming market-oriented government came to power in 1990.

Tanzania and Zambia have had notoriously rocky aid relationships, both experiencing aid booms which mirror their changing policy stances. Both countries received increasing amounts of aid in the late 1970s, which declined abruptly after the advent of policy-based lending in 1980. Tanzania's disagreement with the IFIs was the most public and protracted - it ended with the Economic Recovery Programme adopted in 1986, which received wide backing from the donor community. Zambia received similarly generous support for its reform programme, which began in 1983 but picked up in earnest in 1985. This support fell away when the programme was abandoned in 1987, and was restored in 1990 when a new programme was put in place. Zambia has also enjoyed a special status amongst the bilaterals as a hoped-for model of good governance.

Not all donors have adjusted their aid in accordance with the recipient's policy stance. Analysis of the Zambian experience shows that UNDP actually gave more aid during the break with the IFIs. In both Tanzania and Zambia, Norway, for example, has not cut back on aid in response to adverse policy changes. But several major donors - which in these recipients includes Sweden, but also the US and UK and, of course, the World Bank - have attempted to enforce policy conditionality. The overall pattern of the aid fits that of these major donors. That is, the evidence from these four countries strongly supports the notions that recipients are "rewarded" for implementing reforms, and have been "punished" for not doing so. This finding is not surprising given the recent suggestion that the World Bank now controls about 60 per cent of aid into Africa *via* financing agreements (Lele, 1993; cited in Hyden, 1994).

In the case of Nicaragua, there was a major shift in donors following the regime change in 1990 with the ending of socialist country support (accidentally coinciding with the collapse of the regimes of these donor countries) and with restoration of relations with the multilateral financial institutions and the U.S. government. Presently, agreements with the IMF on a structural adjustment package (SAP) form a general guide for most multilateral and bilateral donors whether or not to commit new funds. Sector lending programmes of the World Bank and the Inter-American Development Bank have become important and are tied into the SAP. In the 1980s, the multilateral lending to Nicaragua was hit by a US veto for political reasons. The Nordic countries and Spain were virtually the only source of liquid foreign finance with no macroeconomic policy strings attached. During the period of hyperinflation (1988-90) the Swedish government did fund several advisory missions led by non-mainstream economists, but the advice of these missions nevertheless replicated most of the macroeconomic elements that usually form the basis of IMF agreements.

In all countries, policy conditionality has witnessed a change in the composition of aid, with a far greater share of balance of payments support (import support and debt relief) than previously. This type of aid is linked to structural adjustment for two reasons: (i) it is easier to "turn on and off" in response to policy changes; and (ii) as recipients reform their economies then aid which operates through the market is both desirable and efficient. The studies suggest that balance of payments support has achieved both these objectives.

Limitations to the analysis

The main purpose of the country studies was to obtain both a qualitative and a quantitative assessment of the macroeconomic effects of aid. The quantitative investigation and, particularly, formal econometric analysis for this study was limited by a number of factors. In Guinea-Bissau data are simply unavailable for a sufficiently long period to obtain sensible statistical results. Both Nicaragua and Zambia have, for different reasons, experienced periods of extreme instability as well as fundamental changes in key aspects of economic behaviour, rendering impossible the estimation of stable, long-run economic relationships. The Tanzanian experience is probably the more amenable to modelling, but for this study we have had to draw

on previous work on import support, which did not extend to model construction. Despite the limitations, each study was able to present data analysis which, at the very least, raises interesting questions.

Aid and external balance

None of the studies found a straightforward relationship between aid and imports. In the cases of Tanzania and Zambia there is a negative correlation between aid and import volume; in Nicaragua there is a weak positive link and for Guinea-Bissau no apparent relationship. For each of these countries export performance proves to be a major determinant of the volume of imports. Three of the countries - Nicaragua, Tanzania and Zambia - have experienced massive declines in their capacity to import (the value of exports deflated by the import price index). The terms of trade plays a differing role for each of these.

Nicaragua experienced a massive drop in exports largely due to the supply constraints emerging just before and after the Sandinista revolution.¹ Price and exchange rate effects have been of minor importance here. Tanzania witnessed a persistent decline in export volume over the period 1970-85. Zambia's export earnings come almost entirely from copper - output of which has dropped somewhat, but there has been no diversification. Guinea-Bissau also has a small export base, though in recent years there appears to be rapid growth of non-official exports, much of which is thought to have gone through parallel markets - thus helping to explain import growth which is quite in excess of that which may be explained by exports and aid alone.

The question we must try to answer is the counter-factual: what would have happened in the absence of the aid? That is, is there any causal link between aid flows and poor export performance? The answer to this question varies.

The Tanzanian study argues that there was a clear link between aid and export performance during the 1970s. At that time aid contributed to an investment boom. The boom increased demand for domestic output, including food, shifting the price ratio away from

exportables. The Tanzanian story is a variation on the theme of aid as Dutch disease, in which the aid inflow induces a real exchange rate appreciation and hence a worsening of export performance. Relative prices were found to be important in the determination of long-term export growth in Tanzania.

The authors of the other three studies argue against such a Dutch disease story on a number of grounds. First, whatever has happened to the real exchange rate exports are not particularly sensitive to it, because of supply bottlenecks in Nicaragua (see above and note 1) and Guinea-Bissau and the dollarised nature of copper production in Zambia. Second, incentives have changed far more because of adverse external price changes (Guinea-Bissau and Zambia) so that the effects of aid on the real exchange rate will be marginal. Third, of course if the exchange rate is fixed then - with world prices given - aid will lead to a measure of inflation which is equivalent to a real exchange rate appreciation. However, the exchange rate has not been fixed because aid has been associated with policy reform, a major part of which has been substantial nominal devaluation. Zambia in the mid-80s experienced a massive real depreciation because of aid-supported policy reform, though devaluations since 1990 have been mostly offset by inflation. Guinea-Bissau has achieved a modest real depreciation. Nicaragua suffered from a grossly overvalued official exchange rate in the 1980s and skyrocketing black market rates. Preferential exchange rates for exporters still tended to lag behind domestic inflation. Although there was no clear management of counterpart funds under the Sandinista governments, it is generally perceived that the commodity aid was inflationary because of the high implicit subsidies on the imported goods and the monetary financing of the fiscal deficit. Yet, the structural and political factors mentioned before, were likely more important to Nicaragua's export performance than the real exchange rate appreciation. During the 1990s, inflation was brought under control, the exchange rate was stabilized and black markets disappeared. It is unlikely this could have been achieved without the generous, liquid foreign aid inflows. The exchange rate now operates as a nominal anchor to the economy and since export performance has remained dismal, aid inflows are the main source to keep up the Central Bank reserves required to defend the *córdoba*. Without this support a devaluation would become necessary with immediate inflationary consequences and would likely end the current economic stability.

The real exchange rate is one of the areas that the case studies identify as there being a trade-off between the effects of aid monies and aid supported reforms: RER appreciation from the funds but depreciation from the policies. This trade-off is discussed in greater detail below, but here we note that the net effect on the exchange rate in the four countries is that they have at least held their real exchange rates constant or depreciated them.

The external balance contains a number of other items. Of these, debt service has been important in each of the four countries.² All four borrowed from private sources in the 1970s, though the quantitative significance of this borrowing varied. Both Nicaragua and Zambia entered the 1980s with a considerable burden of debt, most of which was from private creditors. This burden has never been lifted. All four countries are in fact now dependent on aid to be able to meet their debt service obligations.

Counterfactual analysis must ask how much debt would be serviced in the absence of the aid. The answer is: very little. As just stated, none of the four (with the possible exception of Tanzania) could meet its debt obligations from its own resources. To the extent that they would try to meet the obligations without the aid then the aid is equivalent to a gift of untied foreign exchange (fully fungible), and so is in fact increasing imports over what they would be in the absence of the aid. However, as most of the obligations would probably not be met without the aid the marginal impact of much of the aid is in fact to pay back debt. In Zambia most inflows have indeed been *de facto* of the nature of a massive debt rescheduling operation - a process that perhaps has its ultimate expression in the Rights Accumulation Programme (RAP). Obligations are paid out of increasingly concessional sources of finance so that the total debt stock has remained more or less unchanged, rather than increasing as may be expected when debt is rolled over.

But the counterfactual should go further. Without debt relief each of these countries (again with the possible exception of Tanzania) would almost certainly soon have to default on its IFI repayments, leading to a cessation of new lending. In the case of Nicaragua, aid flows from USAID and other donors were explicitly provided after 1990 with the aim of 'normalizing'

relations with the IFIs and repaying arrears on debts accrued during the 1970s and early 1980s. Without the financial inducement, implementation of the reform programme may weaken or even be abandoned altogether - resulting in less aid from the bilaterals. By contrast, staying with the reform programme has paid the debt, and a bit more besides. The implications of a lessening of donor resources in terms of both policy and performance and therefore potentially severe.

Aid and internal balance

The relationship between aid and investment shares some common elements with that between aid and imports. To the extent that aid funds are being used for debt service then they cannot be used for investment. However, it was argued above that the counterfactual would have lower imports, even where no direct positive link has been found between aid and imports. The studies of Nicaragua and Zambia found very strong relationships between imports and investment. Thus, if aid is allowing higher levels of imports, it will also be facilitating greater investment.

None of the country studies reported an economically significant negative relationship between aid and aggregate domestic savings - though as reported below there is evidence from all four countries of a negative relationship with public savings, at least at certain points in time.

Recipient government reaction to the aid inflow was found to support the theoretical results of fiscal response model - with aid being used to support consumption expenditure, reduce taxes and, so reduce public savings. In both Tanzania and Zambia a recent phenomena (too recent to capture econometrically) has been a decline in the tax ratio - the government revenue base thus becomes more reliant on external assistance. In Guinea-Bissau the available data suggest that tax collection has relaxed with higher aid inflows. In the Nicaraguan case aid appeared to displace public savings in the 1980s, though this relationship has disappeared in the 1990s. The study argues that this changing relationship has been due to a change in the nature of aid inflows and the policy regime and conditionality. In the 1980s aid flows provided little liquid finance but commodity aid did require heavy government subsidies adding to mounting fiscal deficits. While the costs of civil war rose, monetary expansion fueled inflation and eroded

government revenue because of lags in the tax collection (the so-called Olivera-Tanzi effect). In the 1990s, the new government retook macroeconomic control under an IMF agreement prohibiting any monetary funding of budget deficits and implementing a drastic cut in public spending. Deficits are now fully aid financed and non-inflationary.

Private savings have been on the decline in recent years nearing a state of complete collapse in all four countries. In Nicaragua and Guinea-Bissau this has been attributed to an important degree to the combination of increasing amounts of balance of payments support and trade liberalization. In both countries consumer goods imports increased dramatically following the breakdown of import barriers and, particularly in Nicaragua, the stabilization of the exchange rate reducing import costs. Fungible aid inflows provided the foreign exchange to finance the consumption boom and with no accompanying economic recovery, private savings fell.³

In the earlier period in Tanzania, the country study shows how donor practice of requiring counterpart contributions to project expenditures forced up domestic savings, including private savings which were then transferred to government. In the more recent period, however, domestic savings in Tanzania have collapsed. The Zambian savings rate, by contrast, has been resilient - private savings gave fluctuated, but (as a per cent of GDP) not shown a marked downward trend.

Aid is found to have positively supported investment, especially in the periods before the advent of balance of payments support. In Guinea-Bissau aid still pays for virtually the whole of the government's investment programme - and demonstrates the point that there can be no fungibility if no local resources are devoted to an activity. Aid's role in supporting investment in Tanzania's first aid boom is quite clear, though the link in the more recent period - when much investment growth now comes from the private sector - is less obvious. In Zambia a significant relationship exists with private investment, but this includes the parastatal sector (which has accounted for most non-governmental investment). In Nicaragua, aid inflows are entirely accountable for the recovery of public investment during the 1990s (despite the fiscal austerity). Some investment programmes, such as the social investment fund, are 100 percent

aid financed. Under the present policy regime of no domestic financing of fiscal deficits, public investment programmes will almost inevitably suffer from any reduction of aid budgets. During the 1980s, the link between aid and public investment was less strong, despite the fact that much of the support consisted of capital goods supplies. This paradox is explained by the fact that part of the capital goods were sold to the private sector and another part remained obsolete because of the technologically backward quality of the investment goods provided by the socialist countries.

Examination of the link between aid and private investment concentrates on the effects of government investment. The studies of Guinea-Bissau and Nicaragua emphasize the importance of infrastructure for private investment. However, in Guinea-Bissau, private investment remains extremely low. The Nicaraguan study also identifies a direct crowding in relationship, albeit with a time lag of two to three years. It could thus be expected that the recovery of public investment since 1991 should now start to show spin-off effects. It is argued at the same time, however, that this will also depend on other factors including the private savings rate, better functioning domestic credit system and solution of persisting uncertainties relating to property rights and domestic security.

Whilst aid may have supported investment this fact does not immediately link aid to growth as the investment must be productive. Both Tanzania and Zambia have experienced low or negative output growth despite reasonable rates of investment: consequently the ICOR has been exceeding high or negative. In Nicaragua no significant link can be found between growth and imports of capital goods (which are a close proxy to investment) and, moreover, the productivity of capital was found to have fallen dramatically since the mid-1980s. In Guinea-Bissau the level of aid supporting investment is said to be too high for the country to absorb efficiently. Aid must take some of the blame for this general state of affairs - partly for funding costly failures (such as some of the monuments to inefficient import substitution in Tanzania) and partly because project proliferation strained the economy's ability to meet recurrent costs of existing investments.

Import support

It is of course for the latter reason that donors turned to import support. The studies for Nicaragua and Tanzania state that import support has had the desired effect of fuelling growth through the utilisation of existing capacity. Critics of import support argue that it enables importation of luxury consumer goods. This claim is examined in the *Zambian study* and the earlier report on Tanzania (Doriye *et al.*, 1993). In both cases there is no discernible shift of import composition toward consumer goods during the periods of import support schemes: this fact is the more surprising since both countries have also introduced "own funds" import schemes. In fact, both show some increase of capital goods - which may occur since goods needed to utilise existing capacity are not only intermediates but items such as generators or replacement machines which are essential for rehabilitation. In the Tanzanian case more detailed analysis of the use of OGL funds found the bulk to be used for machines and machine parts, bicycles, batteries, pharmaceuticals and the production of incentive goods (soap and soft drinks). A more aggregated analysis of the use of auction funds in Zambia suggests broadly similar results. Criticisms that import support funds enable luxury consumption thus appear unfounded.

As mentioned earlier, both the Nicaraguan and Guinea-Bissau reports discuss a consumer boom, following in the wake of liberalisation. The Guinea-Bissau and Nicaragua reports suggests that trading activities are taking precedence over longer run investments and most credit available to the private sector is channelled to commerce related to (durable) consumer goods sales. This is an issue that has also been raised in the context of the other economies - for example in the report by Bhaduri *et al.* (1994) on import support in Tanzania. But the point remains a controversial one: is the expansion in trading activity at the expense of productive investment or is it a necessary complement to it? In the case of Nicaragua and Guinea-Bissau the former seems to hold in the present state of affairs. In Tanzania and Zambia the picture is less clear. Further work is required on this issue.

The management of import support has also been controversial, with bilateral donors being concerned about the proper accounting of aid monies and the collection and use of counterpart funds. Doriye *et al.*'s discussion of Tanzania suggested that donors had put too

many conditions the procedures for the use of OGL funds - and pointed out that these conditions can vary from donor to donor. These procedures raise the cost of funds to the user (thus making exchange rate unification problematic) and place a burden on government in areas where that lack expertise (e.g. checking *pro forma* invoices). In agreement with Winpenny's (1989) conclusion, it is argued that donors should seek disbursement mechanisms which minimise procedural requirements - such as an auctioning of forex to the commercial banks. Import schemes are moving in this direction.

One advantage of an auction system is that the collection of counterpart funds is not a problem, as it has been under administrative schemes. In Tanzania, much of the administrative import support went to the parastatals so they received a double subsidy - once from a preferential exchange rate and again through part repayment of amounts owed (the collection rate was about 50 per cent). These problems have been resolved with the move to the market-based OGL system. In Zambia, the Japanese have recently returned to an administrative system, which has experienced collection difficulties. The authorities in Guinea-Bissau are only now getting to grips with collection of payment arrears of some years' standing.

The use of counterpart funds is also an issue because of their supposed inflationary impact. If the funds can be used to reduce the need for deficit finance, rather than be used to fund incremental expenditures, then counterpart funds tend to reduce monetary growth. In Tanzania and Zambia the majority of donors are coming to be flexible so as not to require incremental expenditures - though in Nicaragua the story is more mixed with different requirements from different donors.

Aid dependence

Aid dependence is the situation in which a country will require aid to meet its investment and foreign exchange financing requirements indefinitely. Guinea-Bissau, Nicaragua and Zambia are forced into a position of aid dependence by their high debt burdens. In addition, in Nicaragua and Guinea-Bissau, the declining private savings rates, dismal export performance and rising (consumer-based) import demand have widened the ex-ante internal and external gaps

requiring continuously high aid inflows. Forecasts for Tanzania suggest that import volume will grow faster than the capacity to import, and also that the savings rate has been declining. The elimination of aid dependence needs not only aid money to promote growth but also policies to adjust the economy.

9.3 Aspects of adjustment policies

All four countries have a history of heavily-controlled economies. Guinea-Bissau espoused a marxist development philosophy and Nicaragua a path of revolutionary development. The leaders of both Tanzania and Zambia were inspired by visions of African socialism. The egalitarian ideals of these governments attracted some donors - notably Sweden. But it is now believed that the development strategy was flawed. State allocation of resources was inefficient and became heavily tainted by corruption. Increasingly scarce government resources resulted in rationing of public goods and services (such as health) and deterioration in utilities - both of which were to the detriment of the rural poor.

It is easy in retrospect to blame the countries for "wrong policies", but it must be remembered that these policies received support at the time from the donor and important segments of the academic community. Academics played a role in delaying adjustment at least in Tanzania, and elements of the donor community for a long time remained hostile to market-led development. Two lessons must be drawn from these facts. First, that donors are also culpable for past mistakes. Second, complacency about current development strategies may be equally misplaced: critical examination of strategy and aid's role is vital at all times.

It was mentioned above that the pattern of aggregate aid flows to each of these countries since the early 1980s demonstrate donor responsiveness to changing recipient policies. Aid has supported adjustment. This finding contrasts with that of Mosley *et al.* (1991), who argue that donors have been indulgent of slippage. Whilst there has been some slippage, the reform programme in each country has made some major steps, and - as the Zambian case shows particularly strongly - donors have reacted when the government stops moving "in the right direction".

The effects of this adjustment have been mixed. All four economies are experiencing modest output growth - which in each case represents a reversal over previous experience. Judgement would suggest that aid monies may be contributing to this growth but that policies also play a part: but adjustment takes time. Guinea-Bissau and Tanzania, which both started adjustment in the mid-80s, illustrate that policies must be consistently applied for a not inconsiderable period for beneficial effects to become established. Nicaragua and Zambia may therefore be considered to be at the early stages of the process.

The remainder of the discussion focuses on some key issues of current relevance.

Stabilisation and adjustment

It is commonly believed that stabilisation is necessary for adjustment. High inflation discourages the private investment which is supposed to be the foundation of renewed growth. All four countries have experienced high inflation. Whilst the general statement that stabilisation is necessary, we can also ask how much stabilisation. Tanzania has sustained real GDP growth rates of over 4 per cent a year despite inflation of 30 per cent. But in Guinea-Bissau inflation has been twice that and has reached 300 per cent in Zambia - levels which are unlikely to be compatible with adjustment. By contrast, in Nicaragua inflation was reduced from 7,500 per cent in 1990 to around 20 per cent in 1992-3 - a clear case of aid-supported policies offsetting any inflationary impact aid inflows may have had. What is more, a reduction of the foreign assistance is likely to trigger inflation again and the Central Bank would lose control over the exchange rate.

Government budgets in all four countries are reliant on donors both for funding government's debt service and some local expenditure obligations and for the counterpart funds to reduce the need to resort to commercial borrowing or printing money. Shortfalls in donor finance have therefore had inflationary effects, as governments have tried to stick to their expenditure plans (as in Zambia in 1993 when the government had to meet debt obligations and unanticipated expenditures in the face of lower donor finance).

Slippage by recipients has been quite high for monetary targets - as in Guinea-Bissau and Zambia. Continual and permitted slippages raise questions about the credibility of the adjustment programme. The political conditions may hamper full and faithful compliance to such programmes. Despite serious efforts to stick to the IMF targets, Nicaragua's fragile social balance provoked the new government to permit a general wage increase as part of a social consensus deal with the Sandinista dominated trade unions in 1992. Sanctions followed immediately. An IMF standby credit was halted and US Congress cut the USAID budget for Nicaragua.

Credibility, sustainability and donor support

When adjustment policies were first introduced in the 1980s there was an expectation that adjustment could occur over a period of three to five years. However, there is now recognition that adjustment is a long-term affair, and the focus of adjustment programmes has changed accordingly. Early programmes emphasised stabilisation, but by the late 1980s more attention was being paid to developing infrastructure to relieve supply bottlenecks. In the 1990s human development issues have assumed importance.

Support for a country's adjustment can therefore be a long term affair - and in many cases it may be some time before results are apparent. However, the IFIs often appear over-optimistic about the results which will be achieved. Tables 9.1 and 9.2 present IFI projections and outturns for Tanzania and Zambia. From these it can be seen that the IFIs have been systematically over-optimistic about outturns.

Why has performance not matched expectation? One answer must be that the expectations were unrealistic. It does not create confidence amongst donors or the population of the recipient if the programme continually fails to meet the targets which are set for it. The programme must appear credible for entrepreneurs to have confidence to respond to changing incentives - credibility including the belief that government will stick to the programme.

Table 9.1: Forecasts and outturns of macroeconomic variables for Zambia
(growth rates in per cent, unless indicated otherwise)

		1991	1992	1993
Real GDP	Actual	-2.0	-3.4	4.1
	1992 estimate	2.0	3.0	n.a.
	1991 estimate	3.1	3.7	4.3
Non-mining GDP	Actual	-0.7	-4.5	4.9
	1992 estimate	2.1	3.1	n.a.
	1991 estimate	3.7	4.1	4.6
Consumer prices	Actual	111.0	191.2	138.3
	1992 estimate	45.0	15.0	n.a.
	1991 estimate	40.0	20.0	10.0
Copper price (\$/lb)	Actual	1.1	1.0	0.87
	1992 estimate	0.9	0.9	n.a.
Copper exports	Actual	-14.8	-15.3	n.a.
	1992 estimate	-0.1	2.2	n.a.
	1991 estimate	0.3	0.1	2.2
Non-copper exports	Actual	-27.1	-11.9	n.a.
	1992 estimate	39.2	12.5	n.a.
	1991 estimate	16.7	10.0	10
Import volume	Actual	-11.5	24.1	-4.3
	1992 estimate	11.3	-3.1	n.a.
	1991 estimate	-5.9	-4.1	0.2
Money supply	Actual	98.1	98.5	107.2
	1992 estimate	25.0	10.0	n.a.
	1991 estimate	25.0	15.0	10

		1991	1992	1993
Domestic savings	Actual	12.0	6.4	9.1*
	1992 estimate	12.6	14.0	n.a.
	1991 estimate	19.2	19.3	20.2
Investment	Actual	13.5	15.0	14.1*
	1992 estimate	19.5	20.0	n.a.
	1991 estimate	18.7	20.7	21.7
Government revenue	Actual	17.0	14.0	12.0
	1992 estimate		17.5	17.7
	1991 estimate	26.0	25.0	24.5

Note: * estimate from ESAC Report

Table 9.2 IFI forecasts and outturns, Tanzania (US\$ million)

	1983	1984	1985	1986	1987	1988	1989	1990
Exports								
World Bank	480	500	580	660	720	800	-	-
IMF	-	-	330	400	440	520	560	620
Actual	380	390	290	350	350	380	400	410
Imports								
World Bank	1,160	1,180	1,210	1,300	1,410	1,490	-	-
IMF	-	-	900	1,080	1,150	1,220	1,185	1,233
Actual	810	870	1,000	1,050	1,150	1,190	1,230	1,360
Trade balance								
World Bank	-680	-680	-630	-640	-690	-690	-	-
IMF	-	-	-570	-651	-710	-700	-620	-610
Actual	-430	-490	-710	-710	-800	-810	-830	-960

Source: Rattsø (1992: 7-8)

Ownership and commitment

Recipient "ownership" of adjustment programmes has become to be seen as an important issue: there remains a strong perception that the IFIs "force" policies on recipients. The World Bank's Vice-President for Africa, Edward Jaycox, announced in 1993 that the Bank would no longer prepare policy documents for the recipient - they may advise, but the proposals should come from government. Jaycox also stated that the Bank would also not place long-term expatriates. The latter issue is important for the first to the extent that expatriates may dominate the policy making process. Where advisors play a key role in ministries such as finance the concept of ownership implies central involvement of local personnel at all levels.

Ownership is crucial to ensure recipient commitment to the programme. Experience from countries in the study suggests limited commitment of government to some key areas of reform, notably in Zambia in the mid-80s. In both Tanzania and Zambia there have been considerable postponements in public sector reform - both of parastatals and in the civil service itself. These findings reinforce the conclusion of Mosley *et al.* (1991) that opponents of reform must be engaged in dialogue and, as far as possible, "brought on board". This is not likely to happen if the government itself is half-hearted about the reform programme.

Social effects

The social effects of adjustment have been mixed - and remain contentious. The positive view is that adjustment shifts the terms of trade in favour of rural areas, encourage better targeting of social expenditures and remove costly subsidies to the non-poor: all of these things benefit the poor. The alternative view is that adjustment results in cuts in social expenditures, and that these cuts fall on the poor. The poor are also adversely affected by the recessionary impact of the programme.

Although the experience is mixed, the evidence from the four countries tends toward the first view. Analysis of growth in Tanzania and Zambia shows that it has come mostly from the agricultural sector. All four countries had faced periods of shortages which have been alleviated with the advent of liberalisation. A study of the Tanzanian peasantry (Booth *et al.*, 1994)

found that them to be in favour of economic liberalisation - prices may be higher, but they had been unable to obtain goods at the controlled prices. Incentive goods arguments are argued to have played a role in the growth of Guinea-Bissau's substantial parallel sector.

Despite these positive conclusions it can easily be argued - as in the Nicaragua report - that donors need pay more attention to the social development: the figures show very low shares of aid going to these sectors (Doriye *et al.*, 1993; and White and Edstrand, 1994). Despite the World Bank's "New Poverty Agenda" little aid is of direct benefit to the poor.

9.4 Conclusions

The findings of the case studies are summarised in Table 9.3. These results show that the macroeconomic impact of aid is rather more complex than supposed either in the two gap model, or as shown by the empirical literature which regresses imports and investment on aid. There is no clear one-for-one link between these variables, and it is not possible to find any significant relationship in some cases. But if we wish to answer "are these countries better off with aid than without it?" the answer must be "yes". Aid in all four of the recipients is paying a debt burden which could not be met from the recipient's own resources. Without this aid there would be no domestic resources for development and reform would be difficult to sustain.

There has been little formal analysis of import support aid. The studies are broadly supportive of this type of aid, finding that it has the required flexibility and facilitates recipient growth. More generally, aid-supported policies are required to lay a foundation for growth and to off-set some of the potentially harmful macroeconomic effects of aid monies.

Although aid is doing something, there are a number of outstanding issues confronting the donor community:

- the debt burden: for these countries, and others, donors will have to continue to meet debt obligations for the foreseeable future. There is a need for further global initiatives to remove the burden now.

Table 9.3 Summary of results from country studies

	Guinea-Bissau	Nicaragua	Tanzania	Zambia
<i>Aid monies</i>				
Public investment	Aid finances most of the investment budget, so there must be a close relationship.	Aid entirely accounts for the recovery in public investment in the 1990s.	Strong relationship in 1970s, but weaker during second aid boom.	None found, probably because of dominance of balance of payments support.
Private investment	Private investment remains marginal	Expect positive impact through crowding in effects and relaxation of forex constraint.	Crowding out in earlier period, but evidence that private investment beginning to respond in recent years.	Positive relationship found econometrically, but this result related to parastatal investment.
Public savings	Higher aid has been associated with a lower tax effort, and so seems to have widened public savings gap.	Aid appears to have offset taxes, but aid has also removed need for deficit financing. (Deficits are fully aid-financed).	Deteriorating tax ratio may be aid related, suggesting negative relationship.	Tax ratio has declined markedly during 1990s; however there has been no deficit financing since 1993.
Private savings	Not discussed.	In recent period liberalisation and balance of payments support have enabled a consumption boom and so reduced private savings	Savings have collapsed in recent years, though the cause may not be attributable to aid.	No direct relationship; positive to the extent aid is supporting growth.
Inflation	Inflation has not been got under control, to which the failure of aid to reduce deficit financing may be a contributory factor	In the most recent period the aid has helped stabilise the economy by eliminating the need for deficit finance	In the 1970s the requirement for counterpart project financing was inflationary, but the provision of countervalue from the sale of forex in the recent period will have had a deflationary impact.	Donor support to planned expenditures - both debt payments and domestic expenditures - has eliminated the need for deficit financing.
Imports (and Dutch disease)	Aid pays a large share of the import bill.	The country's poor export performance has largely been due to external factors and supply constraints. Aid could play a greater role in the alleviation of those constraints	In 1970s aid-induced price effects discouraged export production. Over period as a whole, aid has just been sufficient to offset the fall in the capacity to import.	Major determinant of import capacity is copper production, to which aid-unrelated. Through providing debt relief aid will have enhanced ability to import.
Growth	Positive.	Positive effects not yet observed, though econometric estimates suggest they may emerge in coming years	Positive, particularly through provision of import support.	Positive, through provision of import support and removal of controls.

	Guinea-Bissau	Nicaragua	Tanzania	Zambia
<i>Aid-supported policies</i>				
Has donor financing been consistent with supporting policy reform?	Yes, substantial increase in aid since reform programme started.	Yes, aid increased with reforms implemented by Chamorro government.	Yes, aid fell post-1980 and has boomed since ERP adopted in 1986	Yes, the two aid booms (mid-80s and 1990 on) coincide with periods of adjustment.
Did government implement required policy reforms?	Substantial reduction in controls, though areas of public sector reform remain to be addressed.	Chamorro government elected on a platform of reform, which it has been implementing.	Since 1986, reforms have been gradually, but steadily, implemented. Donor pressure for further public sector reform (including privatisation).	In 1980s government commitment to reform was weak, though some measures implemented. Since 1990 far-reaching reforms have been undertaken.
Have reforms had desired effects on the economy?	The evidence indicates the time required for adjustment to occur, though there are signs of growth outside of the formal economy.	The economy has been stabilised following a period of hyperinflation. There is little sign of growth, but some hope based on the recovery of investment.	Positive per capita growth has been restored since the adoption of ERP. At least some part of this improvement is attributable to policies.	A tenuous stabilisation has finally been achieved, but the challenge of adjustment remains.

- macroeconomic policy conditionality should be critically reviewed. Aid may end up financing a consumption boom if trade barriers are suddenly lifted as part of a structural adjustment programme and if incentives promoting productive private investment are not fully activated. The latter may be due to, for instance, the recessionary effect of ongoing stabilization policies (including fiscal adjustment), inadequate infrastructure caused by prolonged periods of low public investment levels, malfunctioning credit markets and an overvalued exchange rate caused by the aid inflows. Structural adjustment programmes should be tailor made and not of the "one size fits all" kind. Further, the long-run nature of adjustment and development problems should be recognized.
- social issues and poverty alleviation: human development has regained its proper place at the top of the development agenda, and the consequences of such a strategy need to be fully pursued. Most of the benefits of human capital formation are felt in the long run and are the outstanding example of why aid and adjustment policies require a long view.
- credibility and ownership are key conditions for the sustainability of development efforts and commitment of governments to stick with it. Aid programmes and budgets and policy conditionality should strive to meet this conditions.
- private sector: the response of the private sector has been disappointing and the challenge remains to find how aid can support private development rather than subvert the market.

Notes to Chapter 9

1. From the 1950s till the 1970s, the good performance of the Nicaraguan economy had been export-led and agro-based. Aid played no role of significance in financing imports during this period. The pre- and post-revolutionary civil strife, along with several natural disasters, produced severe supply bottlenecks (labour shortages, infrastructural damage), problems enhanced by a US trade embargo imposed during the 1980s and a complete collapse of the market for the country's major crop (cotton) in the second half of the 1980s. Aid inflows did not consistently compensate for the decline in export earnings. Instead, a direct link between imports and aid emerged as most aid from Latin American and Eastern European donors took the form of non-liquid commodity support. In the 1990s, balance of payments support provided loads of liquid funds, but as it turned out of a highly fungible nature (see below).
2. The studies do not find significant relationships between aid and the other possible accommodation mechanisms such as capital flight. Some aid may have been added to reserves in Tanzania in the late 1980s.
3. The role of wealth effects in this decline of private savings are not entirely revealed by the case studies. Other experiences, such as in the Southern Cone economies of Latin America in the 1970s and Mexico in recent years, also witnessed strong consumption booms following trade and financial liberalization in a situation of high capital inflows. In these cases real exchange rate appreciation and speculative investment driving up real estate and other asset prices increased the wealth owned by households, providing a disincentive to savings. Only in the case of Nicaragua, there are indications that the wealth effect may have played a role, given that financial wealth (bank deposits) has been pegged to the dollar exchange rate and a fair number of households saw their expropriated properties returned.

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TERMS OF REFERENCE

MACROECONOMIC IMPACT OF SWEDISH AID

1. Background

The Secretariat for Analysis of Swedish Development Assistance (hereinafter called SASDA) has been created to report to the Swedish Government of the effectiveness and efficiency of Swedish aid. To this end, SASDA is commissioning a number of background studies, one of which is on macroeconomic issues.

There has been a resurgence of concern in the donor community, and in Sweden in particular, about aid effectiveness. There is a long history of microeconomic evaluations of projects using established techniques. Since adjustment policies are intended to improve the macroeconomic performance of the country implementing those policies donors are turning their attention to aid's macroeconomic effects.

Aid is meant to increase growth. It should do this through supplementing domestic savings and by allowing the importation of the necessary capital goods, both of which permit an increase in investment in the recipient economy (in some situations both intermediate and consumer goods can be

growth enhancing). In this respect, it is important to develop an accounting and behavioural framework for analysing how the economy adjusts to an aid inflow and to use it to examine aid's impact on imports, investment and related macroeconomic variables.

SASDA commissions a study on the "Macroeconomic Impact of Swedish Aid" (hereinafter called the study) on the bases of three country case studies: Guinea-Bissau, Nicaragua and Zambia. The study will also draw on the evaluation of import support aid to Tanzania prepared for SIDA by Joshua Doriye, Howard White and Marc Wuyts, Institute of Social Studies, The Hague.

2. Objectives

The study shall:

- a) Analyse the macroeconomic effectiveness of aid in Zambia, Nicaragua and Guinea-Bissau;
- b) Advance recommendations with the object of improving aid effectiveness in the above mentioned countries, and in the framework of bilateral cooperation in general;
- c) Propose methodological tools in order to analyse aid effectiveness in other country studies.

3. Consultants

The study is to be undertaken jointly by the Institute of Social Studies, The Hague (hereinafter called ISS), and the Institute of International Economics and Geography, Stockholm School of Economics (hereinafter called IIEG). The main contributors from ISS will be Howard White and Rob Vos. Karel Jansen will advise on the methodology.

The main contributors from IIEG will be Mario Zejan and Ari Kokko. White shall have the overall responsibility for coordinating the study. Zejan shall coordinate activities at IIEG. Both institutes will make use of research assistants.

ISS shall have main responsibility for the case studies on Zambia and Nicaragua. IIEG shall have main responsibility for the case study on Guinea-Bissau.

4. Outline of the Study

4.1. Methodological paper

A methodological paper will review current debates concerning and approaches to measuring the macroeconomic impact of aid. This review will encompass both the aid

oriented literature and that on the adjustment lending and policies.

On the bases of the review, a methodology shall be presented to analyse aid's macroeconomic impact. An accounting and behavioural framework for the macroeconomic analysis of aid will be presented. There shall be an explicit indication of the data requirements of the analysis.

Work and analysis on Guinea-Bissau will be dependent on available data.

4.2. Preparation of country databases

On the bases of the data requirements indicated in the methodological paper a consistent macroeconomic database for each of the three countries shall be created. This shall be constructed from both national and international sources.

Other studies on the countries concerned with focus on aid effectiveness will be reviewed.

4.3. Analysis

Papers shall be prepared for each country describing general macroeconomic conditions, the aid series that have been produced and exploring preliminary hypothesis about aid's impact.

The study shall analyse for each of the selected countries: the capital and current accounts, the relationship between aid and imports, the accommodation of the internal balance (investment/savings) to aid flows, the decomposition of the investment/savings balance into those for the government and private sector, the monetary impact of aid and counterpart funds, the effects of counterpart funds on fiscal behaviour, the structure of imports and investment, the relationship between aid, output and income, accommodatory mechanisms between aid and the variables which adjust to accommodate the inflow.

Attention shall also be paid to possible links between aid and aid-supported policy reforms and social welfare, income distribution and the environment.

4.4. Field work

The field work shall have a dual function: a) to collect data and other documentation still required; and b) to discuss the research with in-country government and donor officials.

4.5. Conclusions

Conclusions and recommendations shall be presented with special emphasis on § 2 above.

5. Responsibilities

The study is to be undertaken by ISS and IIEG on the bases of specifications under § 3.

White shall prepare an initial draft of the methodological paper.

Zejan shall coordinate data collection for the country data bases. White shall advise as required and check finished product.

White assumes responsibility for country studies on Zambia and Nicaragua. Zejan assumes responsibility for country study on Guinea Bissau.

Field work shall be performed by both teams as appropriate.

6. Time-table

The study starts on September 1, 1993. A final version of the methodological paper shall be completed by end October, 1993.

The databases shall all be completed by the end of December 1993. Preliminary papers with analysis as described under § 4.3 will be completed by the end of January 1994. Field work shall be completed by end March, 1994.

An interim report on the country studies shall be completed for each country by end April, 1994.

The draft final report should be completed by mid-June, 1994. The final report shall be completed by end June, 1994.

7. Reporting

Reporting shall follow the time-table under § 6 at least otherwise agreed upon between the Consultants and SASDA.

Reports shall be presented in English. The final version shall be presented in a written report in English and in a diskette in Word Perfect 5.1/5.2.

SASDA may decide to publish the report(s) in a publication series. The authors may publish results from the study after agreement with SASDA.

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