THE REPUBLIC OF UGANDA

MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT

UGANDA

DISCUSSION PAPER 2

MACROECONOMIC FEATURES OF THE UGANDA ECONOMY AND SOME POLICY IMPLICATIONS

PART TWO

THE IMPACT OF OFFICIAL EXCHANGE RATE DEVALUATION ON UGANDA

STEPHEN MORRIS
ECONOMIST, MPED
ODI FELLOW
VISITING LECTURER, MAKERERE UNIVERSITY

SEPTEMBER 1989

MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT
P.O. BOX 7086
KAMPALA
UGANDA

THE REPUBLIC OF UGANDA

MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT

UGANDA

DISCUSSION PAPER 2

MACROECONOMIC FEATURES OF THE UGANDA ECONOMY AND SOME POLICY IMPLICATIONS

PART TWO

THE IMPACT OF OFFICIAL EXCHANGE RATE DEVALUATION ON UGANDA

STEPHEN MORRIS
ECONOMIST, MPED
ODI FELLOW
VISITING LECTURER, MAKERERE UNIVERSITY

SEPTEMBER 1989

MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT
P.O. BOX 7086
KAMPALA
UGANDA

CONTENTS

EXECUTIVE SUMMARY

This Discussion Paper examines the impact of an official devaluation on the Uganda economy by considering the effect on the balance of payments, the general price level, the Government budget and the industrial sector.

The official exchange rate is shown not to directly determine any component of the official balance of payments. Drawing on the analysis presented in MPED Discussion Paper 1 it is shown that prices are determined by the parallel market exchange rate and not by the official exchange rate. And that changes in the official exchange rate have no impact on the parallel exchange rate.

A simplified version of the Government budget is used to demonstrate that an official devaluation has a very favourable impact on the budget deficit. This is because the Government of Uganda typically achieves a surplus on the foreign exchange account; therefore, after a devaluation government foreign exchange revenue, expressed in shillings, goes up by more than government foreign exchange expenditure, expressed in shillings, goes up. Therefore there is a net shilling gain to the government budget and, as a result of devaluation, the government budget deficit is reduced. Subsequently, for a given level of shilling expenditure, a reduced budget deficit means that the Government need not print so much money. It was shown in Discussion Paper 1 that it is necessary for Government not to print money for inflation to be reduced. Through the gain to the government budget, an official devaluation is anti-inflationary.

But the gain to the Government budget is equal to a loss of economic "rent" to those who have been receiving cheap official foreign exchange. It is argued that industry is not best supported through the subsidy implicit in an over-valued exchange rate because of the costs associated with an over-valued exchange rate. An explicit subsidy to industry is the most efficient means of support. In any case, it is not the price of foreign exchange which is important in ensuring increasing industrial production, but the reliability of regular supply of foreign exchange. The data contained in the industrial production index does not support the idea that industrial production is interrupted by increases in the price of foreign exchange as a result of a devaluation.

1. Introduction

The first MPED Discussion Paper, to which this is a sequel, considered the relationship between money, prices and the parallel market exchange rate. This paper examines the impact of an official devaluation on the Ugandan economy and in doing so draws on some of the analysis presented in the first Discussion Paper.

Discussion paper 1 showed that the official exchange rate did not directly determine any price in the economy. It was shown that prices change with changes in the parallel market exchange rate. The paper then went on to consider what determines the parallel market exchange rate. A high rate of inflation leads to a higher parallel market rate; official foreign exchange, allocated for consumer goods competing with parallel market imports, lowers the parallel market rate; and increases in money supply will both increase nominal demand, and push up the parallel market exchange rate. Each of these effects was demonstrated using recent macroeconomic data.

Discussion Paper 1 showed that, regardless of the merits of monetarist economics in other countries, in Uganda increases in money supply are quickly reflected in increases in the general price level: directly, through increases in nominal demand for local products, and indirectly, through pushing up the parallel market exchange rate, as described above.

Finally, Paper 1 considered the short-term effects of speculation on the price level at times of official devaluation.

This paper moves on from that analysis by examining, in detail, the effect of an official devaluation on the Uganda economy. The effect of official devaluation on the official balance of payments; the general price level - drawing on Paper 1 - the government budget; and the industrial sector; are each considered in turn.

It is argued that the official exchange rate does not directly determine any of the major components of the official balance of payments, and therefore devaluation does not affect the balance of payments. Paper 1 argued that the official exchange rate is not a major determinant of the price level; therefore a devaluation is not directly inflationary. A change in the official exchange rate is important macroeconomically because it transfers resources from net purchasers of foreign exchange to net sellers of foreign exchange. It transfers the implicit economic "rent" gained by official foreign exchange allocatees - through being able to buy inputs at prices set by the official exchange rate and sell output in the marketplace where prices are set by the the parallel market exchange rate- into government revenue. Increasing government revenue permits- for given real expenditure - a reduction in the government deficit, which reduces money creation and thus inflation. This is the central impact of official exchange rate devaluation, and it is discussed in section 4. The economically most important losers from official exchange rate devaluation are industrial allocatees of official foreign exchange whose "economic rents" from allocations of official foreign exchange are reduced. Their predicament is discussed in section 5. First, in sections 2 and 3, we review why, because the official exchange rate is not a "marginal" price, the impact of official exchange rate devaluation on the official Balance of Payments and the general price level, is, for short run stabilisation purposes at least, relatively unimportant.

It should be noted that this paper is concerned with short-run stabilisation only. In making the analysis presented here, assumptions are made which hold true for Uganda today. In the longer term, however, the structure of the Uganda economy will change and, should there be a less rationed and more realistically priced official balance of payments, the official exchange rate will then begin to be the marginal price of imported goods and changes in the official exchange rate will then begin to have an effect on the official balance of payments and the general price level.

2 The impact of official exchange rate devaluation on the official Balance of Payments

Uganda's Official Balance of Payments may be summarized as follows:

Official Balance of Payments

Receipts	Payments
Coffee Sales (C)	Oil Imports (O)
Other Exports (OE)	Government Imports (G)
Program Aid (P)	Debt Payments (D)
Project Aid (Q)	Private Imports (M) (including Program Aid)
	Imports under Project Aid (Q)
	Reserve Accumulation (R)

In assessing how a change in the official exchange rate will affect Uganda's balance of payments, we assume that dollar prices facing Uganda in the world markets can be taken as given. The volume of coffee sales (C) is set by Government purchases of coffee through the CMB. The volumes of all export crops purchased by export marketing boards are determined not by the world price facing Uganda converted into shillings at the official exchange rate, but by the government determined nominal purchase price, which is set within Uganda in shillings. The willingness of farmers to supply coffee, and other commodities, for export at the Government price will depend on the price offered relative to the general price level, (or relative to the parallel market exchange rate), and on their likelihood of actually being paid. But the volume of export crops will certainly not depend on the official exchange rate. The volumes of programme aid and project aid are determined by agreements between the government and the donors. Petroleum products are probably the only imported goods which are supplied to the public with relatively un-rationed supplies of official foreign exchange. Therefore the supply of petroleum products depends on the demand for petroleum products, which is not determined by the official exchange rate, but by the retail price of petroleum products relative to the general price level/parallel market exchange rate. Government imports are determined by the government foreign exchange cashflow; which depends on export tax receipts from export crops. Debt payments are pre-determined by the government's foreign debt obligations. Private imports are, in practise, a residual item in the Uganda balance of payments, equal to disbursements of programme aid plus the residual from the Bank of Uganda's own funds after official requirements have been satisfied.

Therefore the official exchange rate is not a direct determinant of any component of the balance of payments.

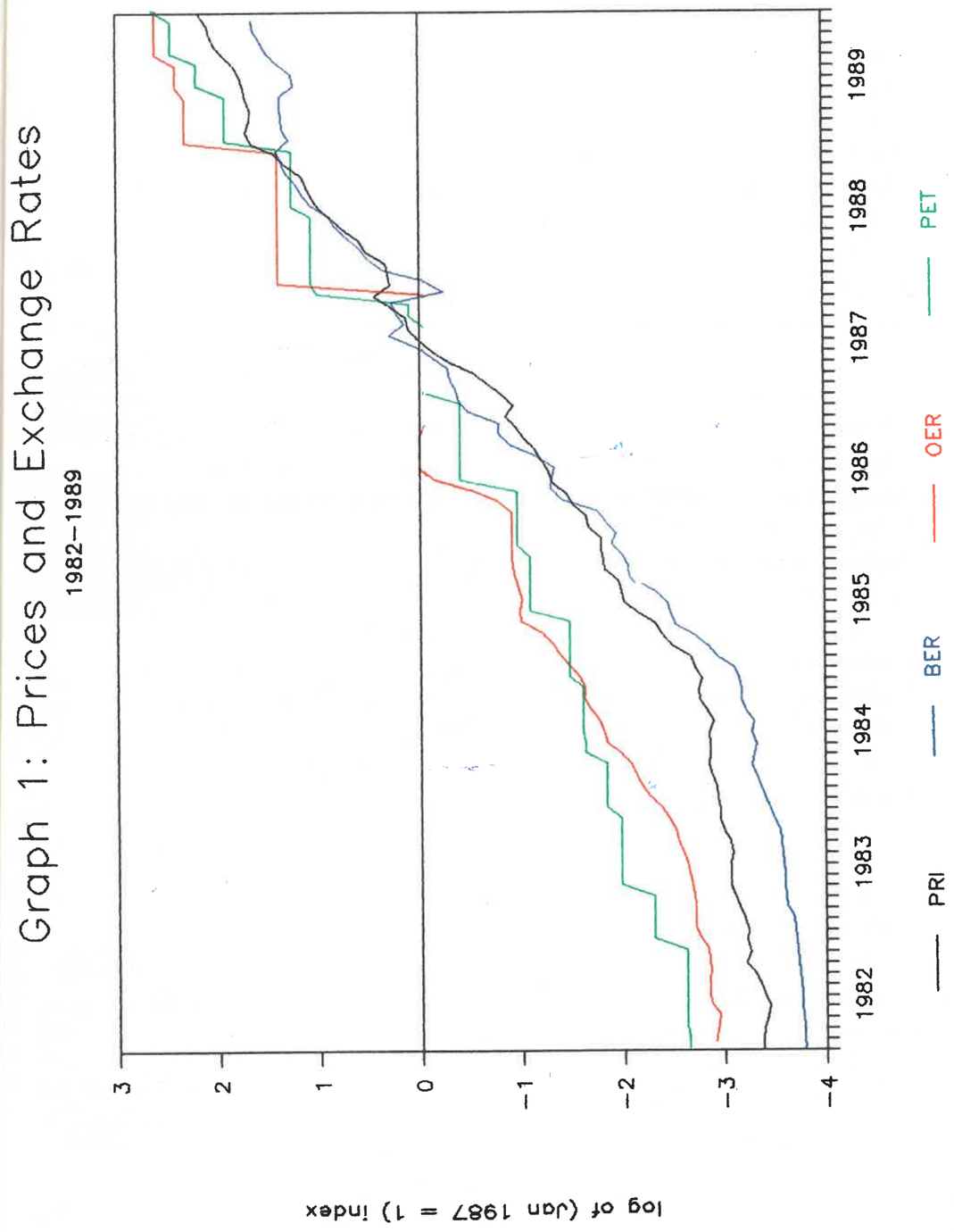
In the longer term, a move towards a less rationed official balance of payments will make the official exchange rate important as the marginal price of imports. Currently, exporters of all non-coffee exports and even, until recently, resident landlords, are able to utilise their foreign exchange earnings- either through direct retention or private barter deals. The coffee purchase price is set with a heavy concern for fiscal requirements. So the official exchange rate is effectively bypassed as a determinant of export incentives. Ultimately, the exchange rate will again become important as a direct incentive for exports.

3. The impact of official exchange rate devaluation on the general price level

In Discussion Paper 1, it was argued that it was the parallel market exchange rate, and government determined prices, (especially petroleum products) which are the key determinants of the general price level. Domestic prices are set by the marginal cost of supply - the parallel market exchange rate - when supply from official foreign exchange is rationed. It is only indirectly that the official exchange rate affects the price level. Here we note a number of these indirect effects:

Government determined prices and the official exchange rate

The key prices are the purchase price for coffee and the Oil Companies' retail prices for petroleum products. These have been adjusted in line with nominal devaluations of the official exchange rate (see graphs 1 and 2) in the past. This has reflected the joint need to adjust both prices and official exchange rate for past inflation. But it is important to note that as long as it is policy to set the official exchange rate at a significant discount from the parallel market rate, there is no economic reason to set the nominal prices in line with the nominal official exchange rate. Incentives to smuggle coffee and oil out of the country depend not on the official exchange rate, but the parallel market exchange rate. There can be an official devaluation without these prices changing. In section 3 we examine the effect of a devaluation of the official exchange rate on the assumption that government determined prices remain the same. This does not imply a reduction of the real oil price, or the real coffee price, (where "real" price is the "nominal" price divided by general price level, or by the parallel market exchange rate), because changes in the official exchange rate have only small order effects on the general price level. It does imply a roughly constant real price for coffee and oil. The merits of changing the real coffee purchase and petroleum product



retail prices can be the subject of a separate analysis.

The parallel market rate and the official exchange rate

If changes in the official exchange rate alter the parallel market exchange rate, they would indirectly alter prices. In Discussion Paper 1 the short-run response of the parallel market exchange rate in the speculation surrounding an official exchange rate devaluation was discussed. But what effects would we expect an official exchange rate devaluation to have on the supply and demand for foreign exchange in the parallel market? If, as is argued in section 4, a devaluation reduces the government deficit, then the supply of local currency to the parallel market is reduced, reducing nominal demand for parallel market foreign exchange. In addition, as inflation is reduced, traders and businessmen will be more prepared to hold assets in local currency which will reduce real demand for foreign exchange on the parallel market. This is for "portfolio choice" reasons (see Discussion Paper 1 and appendix 2). But other than via the overall level of nominal liquidity in the economy, there are no major effects on either <u>real</u> supply, or demand, for parallel market foreign exchange and therefore no major effects on the parallel market exchange rate.

However, an increase in the real prices of coffee purchases and petroleum product sales may be expected to reduce supplies of foreign exchange to the parallel market (by reducing smuggling), thus increasing the parallel market exchange rate and prices. But we are trying to identify here the effect of changes in the official exchange rate, and not the effect of changes in government determined prices.

It is possible that some foreign exchange on the parallel market is diverted from the official market. Reducing the premium obtained from an official exchange rate devaluation may be expected to reduce the incentive to divert funds to the

parallel market, reducing the supply of foreign exchange, and raising the parallel market exchange rate and prices.

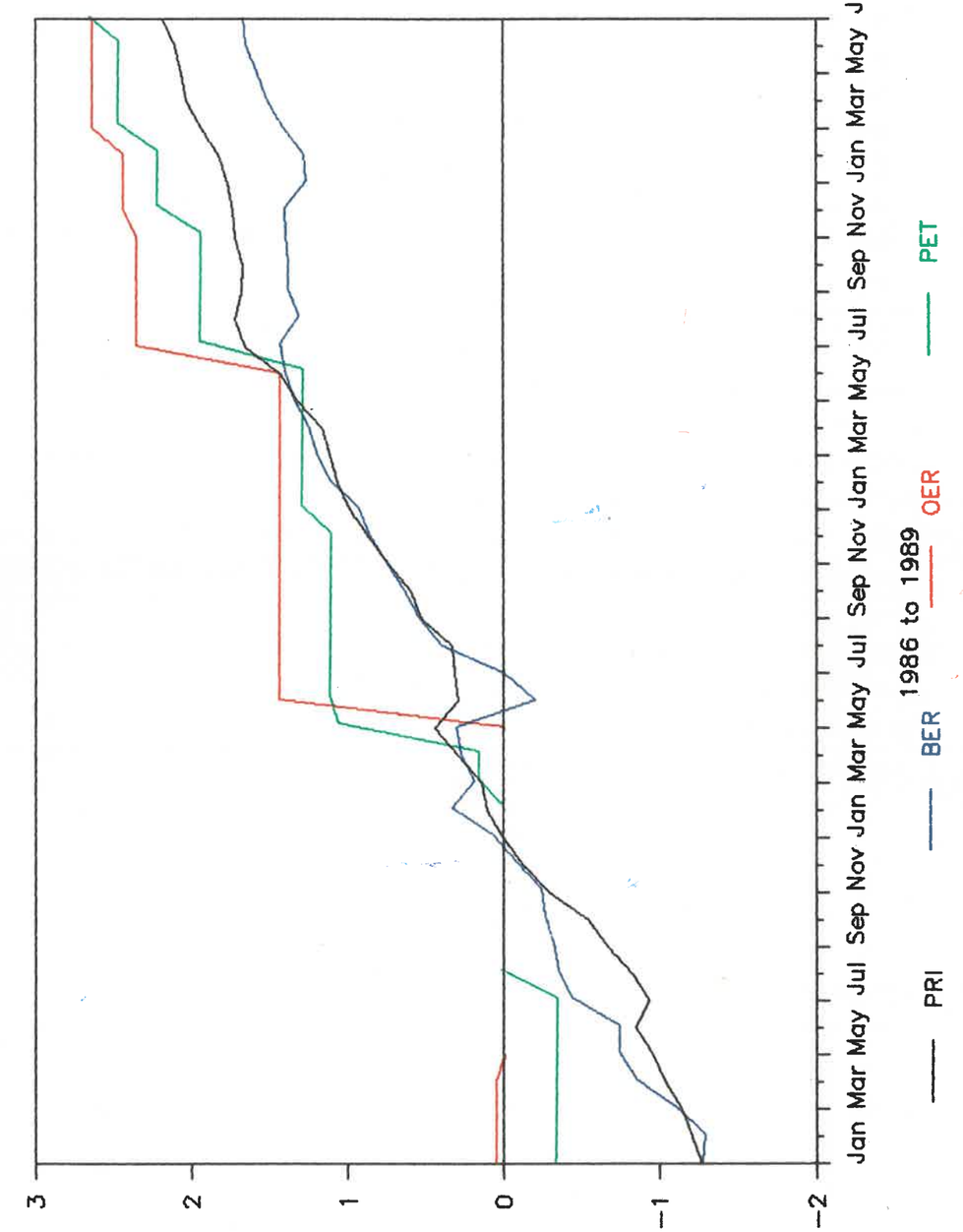
Firms which receive official foreign exchange receive an implicit subsidy as big as the difference between the official exchange rate and the parallel market exchange rate - which is the marginal cost of foreign exchange. This subsidy may be important in determining firms' profits for re-investing, willingness to engage in medium term investments (even in working capital) and ability to obtain official credit to engage in such investments (see section 5). But it will not affect the price of goods which are being imported at the margin with parallel market foreign exchange.

The effect of Import taxes on inflation

Finally, there is one important autonomous effect of an official exchange rate devaluation on the general price level: the shilling value of imports, for the purposes of assessing ad valorem import taxes, are calculated at the official exchange rate; even if they are imported under Ministry of Commerce "No Foreign Exchange Required" licenses using parallel market foreign exchange. So the marginal cost of traded goods to traders, and thus the consumer, is increased after a devaluation through increased ad valorem taxes.

In summary, the domestic price level is determined by the parallel market exchange rate and government determined prices. It is mostly through changes in government prices and short-run (and reversible) speculative phases that devaluation is associated with inflation in the public mind. We also noted that the use of the official rate to value taxable imports implies a small direct effect on the price level.

Graph 2: Prices and Exchange Rates



4. The impact of official exchange rate devaluation on the Government budget

Government receives income both in foreign exchange and in local currency. Similarly, Government incurs expenses in both foreign exchange and local currency. Since Government receives as taxes the difference between oil company sales income and oil company costs at a given official exchange rate, we can think of Government local currency income as including petroleum product sales income net of local costs, and Government foreign exchange expenditure as including all foreign exchange costs of petroleum product imports. Similarly, since Government receives as taxes the difference between net CMB receipts of foreign exchange from exports of coffee and their local costs (including purchase price) to produce that coffee, we can think of Government foreign exchange income as including the coffee sales income and Government local currency costs as including the purchasing and processing costs. If we include foreign financing of the budget in foreign income, the residual government deficit (or local financing requirement) is equal to: the deficit on local currency income and expenditure, plus the official exchange rate times the dollar deficit (or negative surplus) on foreign exchange income and expenditure. It is because Uganda typically achieves a surplus on its government foreign exchange account that devaluation reduces the budget deficit.

The static impact of official exchange rate devaluation

Consider a simplified version of the government budget:

INCOME	EXPENDITURE
Government foreign exchange receipts	Government foreign exchange expenditure
Export Sales (C+OE)	Oil Imports (O)
Program Aid (P)	Project Aid Imports (Q)
Project Aid (Q)	Government Imports (G)
	Debt Repayment (D)

Government local currency receipts	Government local currency expenditure
Local currency taxes	Local currency expenditure
Oil Sales	Export Purchases

What is the impact on the government budget of an official exchange rate devaluation under the following assumptions?:

(i) there is no change in government determined prices (so that Oil Sales and Export Purchases remain constant in shilling terms);

(ii) there is no change in local currency taxes, in shilling terms;

(iii) there is no change in the supply of funds to the parallel market as a result of the devaluation, so that the parallel market exchange rate stays constant; and

(iv) no change in local currency taxes, the parallel market exchange rate and government determined prices together imply no changes in the general price level: thus Local currency expenditure need not change for a given level of services.

The surplus in foreign exchange in the government budget is, (in dollars using the symbols given above):

$$FS = C + OE + P + Q - (O + G + D + Q)$$

Let LD stand for the deficit in local expenditure, and e stand for the exchange rate (shillings per dollar), then the total deficit (local financing requirement) equals:

$$D = LD - (e * FS)$$

This says that the total budget deficit equals the deficit in local currency less the surplus in foreign exchange times the exchange rate. Therefore an increase in the official exchange rate (e), means a decrease in the overall Government deficit (D); as long as the foreign exchange surplus (FS) is greater than zero.

This reduction in the government deficit appears to be a purely "paper gain", an accounting trick. So who actually pays for it? Those with access to official foreign exchange have to pay more shillings for their dollars after a devaluation: they are having to pay. A devaluation is important macroeconomically becasue it transfers resources from net recipients of foreign exchange to net sellers of foreign exchange. This is most easily seen by comparing a consolidated public sector budget with the Balance of Payments summary we outlined in section 2. Since all non-barter exports in Uganda go through government parastatals, with the government taking as tax the difference between world price and local costs, the only private transactions in the official Balance of Payments are sales of foreign exchange by the Bank of Uganda to private importers. The amount sold must be exactly equal to the public sector surplus in foreign exchange (excess of income over expenditure) plus decumulation of BOU reserves. Therefore it follows that total credit expansion in

the economy is equal to the deficit in local currency of the public sector minus net sales of foreign exchange to the private sector (valued at the official exchange rate), plus private credit expansion. This is shown in Appendix 1.

Illustration with the 1989/90 budget

Below is a summary of the 1989/90 budget broken down into foreign (tables 1a, 1b) and local (table 2) items. This summary is based on budget estimates, but since the published budget estimates are not in this format, some of the figures are indicative only. We assume initially that the official exchange rate remains unchanged throughout the year at 200 shillings per US dollar. In particular, it is assumed that all import support funds are sold at this rate.

Table 1a: Foreign Exchange Items in the Budget (US dollars)

Receipts (US$ million)		Payments (US$ million)	
Coffee[1]	285	Oil Bill	80
Import Support	200	Recurrent Imports	50
Project Support	240	Debt Payments[2]	80
		Project Support	240
Total	725	Total	450 ~~430~~

275

Thus there is a surplus in foreign payments and expenditure of US$ 295 million. Converted into shillings, at the current official exchange rate of 200 shillings to the dollar, Table 1a becomes:-

Table 1b: Foreign Exchange Items in the Budget (Uganda shillings)

(at exchange rate 200 USh/US$)

Receipts (USh billion)		Payments (USh billion)	
Coffee	57	Oil Bill	16
Import Support	40	Recurrent imports	10
Project Support	48	Debt Payments	16
		Project Support	48
Total	145	Total	90

Therefore the foreign exchange surplus, in shilling terms, is 55 billion shillings. Local items in this formulation are local taxes and expenditure, and receipts from petroleum product sales (Government receives the difference between local sales and foreign import costs) and payments to farmers (Government receives the difference between foreign export receipts and local purchase costs):-

Table 2: Local Items in the Budget

Receipts (USh billion)		Payments (USh billion)	
Domestic Revenue[3]	64	Domestic Expenditure[4]	155
Oil Sales[5]	26	Coffee Purchases[6]	50
Total	90	Total	205

This gives a deficit on local items of 115 billion shillings, and an overall deficit (on local and foreign items) of 60 billion shillings. Combining tables 1b and 2, we have:-

Table 3: Consolidated Budget (at 200 USh/US$)

Receipts (Ush billion)		Payments (USh billion)	
Domestic Revenue	64	Domestic Expenditure	155
Coffee Taxes	7	Recurrent Imports	10
Oil Taxes	10	Debt Payments	16
Import Support	40	Project Support	48
Project Support	48		
Total	169	Total	229

Now suppose the official exchange rate was devalued to 400 shillings to the dollar. Table 1b would become:-

Table 1b': Foreign Exchange Items in the Budget
(Uganda shillings at exchange rate 400 USh/US$)

Receipts (USh billion)		Payments (USh billion)	
Coffee	114	Oil Bill	32
Import Support	80	Recurrent imports	20
Project Support	96	Debt Payments	32
		Project Support	96
Total	290	Total	180

Combining tables 1b' and 2 to give a new consolidated budget gives:-

Table 3': Consolidated Budget (at 400 USh/US$)

Receipts (USh billion)		Payments (USh billion)	
Domestic Revenue	64	Domestic Expenditure	155
Coffee Taxes	64	Recurrent Imports	20
Oil Taxes	-6	Debt Payments	32
Import Support	80	Project Support	96
Project Support	96		
Total	298	Total	303

Thus a budget deficit of 60 billion shillings is reduced to 5 billion shillings. This is the simple accounting benefit of changing the official exchange rate, which on the assumptions we have made so far would not have a "cost-push" effect on prices.

We have assumed that there has been no increase in the nominal value of taxes, expenditure, or domestic prices in line

with the devaluation. We have assumed constant real government expenditure, so that the cost of recurrent imports has gone up in line with the exchange rate devaluation. If total nominal expenditure were held constant, including imports, so that there was a real reduction in recurrent imports, there would be an additional 10 billion shilling benefit to the government budget from the devaluation, assuming US$50 million of recurrent imports. If taxes on imports were allowed to rise in line with the devaluation (which is in practice an autonomous effect of devaluation, see section 3, above), this item of revenue (non-oil customs duty plus sales tax on imported goods) would rise from 17 billion shillings at 200 sh/$ to 34 billion shillings at 400 sh/$. If the increased shilling cost of petroleum products were passed on to the consumer (with total nominal taxation remaining the same), there would be a gain of 16 billion shillings. Note that both the last two measures (especially the latter) would have direct inflationary impact through costs (unlike the devaluation itself). On the other hand if all the gain from the devaluation to shilling revenue from exports were passed on to the coffee producers, the budget deficit would be increased by 57 billion shillings (there would be a decrease in export taxes because of increased coffee purchase costs).

The effect of a devaluation from 200 Shs/$ to 400 Shs/$ depends on the assumptions made about changes in government prices and expenditure. The effect of devaluation can be summarised as follows:

1. Assume: no change in other items in the government budget:
   Effect: - a gain of 55 billion shillings

2. Assume: total nominal government expenditure constant (real expenditure on recurrent imports reduced):
   Effect: - an additional 10 billion shillings

3. Assume: taxes on imports rise with nominal value of imports
   Effect: - an additional 17 billion shillings

4. Assume: assuming petroleum prices rise in line with the exchange rate:
   Effect: - an additional 16 billion shillings

Taken together, 1, 2, 3 and 4, imply a total benefit to the government budget in increased revenue of 108 billion shillings. But:

5. Assume: export purchase prices rise with increased shilling value of shipments:
   Effect: - a loss to the budget of 57 billion shillings

The net 55 billion shillings gain from a pure devaluation would be sufficient to pay 100,000 civil servants an extra 45 thousand shillings a month salary with no change in the budget deficit. These gains to the government budget have their counterpart in increased costs to net purchasers of foreign exchange. Government has a US$ 295 million surplus (see table 1). Assuming no change in reserves at the Bank of Uganda, the private sector and parastatals must be net purchasers of US$ 295 million. It is they who must pay the increased price. The problems of industrial users following devaluation are discussed in section 5.

This exercise illustrates the implications of the structure of the Government budget for the impact of devaluation, based on extreme exchange rate assumptions: initially, with all foreign exchange transactions throughout the fiscal year at the current official exchange rate of 200 shillings to the dollar, as compared to all transactions at the current SIP exchange rate of 400 shillings to the dollar. From the point of view of the simple accounting gain to the government budget, it would not matter whether the higher exchange rate were used on all

transactions, or only on the sales of the US$ 295 million "surplus". However, in the longer term, using the lower exchange rate for transactions "netted out" within government accounts is of little benefit to anyone and creates long-run inefficiencies in allocation through excessive foreign expenditure by government. Using a higher exchange rate on only some of the US$ 295 million surplus would enable Government to direct cheaper foreign exchange to some users. The danger is that sales at the higher rate reduce pressure to charge a realistic rate to those receiving cheaper foreign exchange.

The dynamic impact

This analysis of the structure of the Government budget also has implications for changes in the budget deficit, and inflation, over time. Suppose that "real" income and expenditure remain constant over time, so that foreign components of the budget remain constant in dollar terms (assuming negligible dollar inflation), and local components of the budget grow in line with domestic inflation. Suppose the budget is initially in balance, with a surplus of foreign income over foreign expenditure financing a deficit on local income and expenditure. Now suppose that there is small shortfall on some component of revenue, so that the budget goes temporarily into deficit. The deficit implies money creation (printing money) to finance it, which in turn implies inflation, which further implies a larger deficit, because the shilling value of the foreign surplus remains constant and the shilling value of the local deficit grows with inflation. In the absence of official exchange rate devaluation, or further austerity (a permanent reduction in real Government expenditure), the deficit will grow larger and larger and inflation will accelerate. There is therefore a clear lesson for policy-making: if a budget plan goes off course, it can be corrected by decreasing real expenditure or increasing revenue. In Uganda, official exchange rate devaluation is one way of increasing revenue. Delaying exchange rate devaluation will make the situation much worse. Inflation creates an overvalued exchange rate, which increases the real budget deficit, implying yet further increased inflation[7].

5 The impact of official exchange rate devaluation on the Industrial sector

Section 4 emphasised the benefits to the Government budget of devaluation and the resulting reduction in inflation. However, for every shilling gain to the Government from devaluation, someone else is losing. Allocatees of official foreign exchange who have to pay closer to the market price of foreign exchange are losing the benefit of cheap forex. We may therefore think of the gain to the government budget as deriving from a reduction in an "implicit subsidy" to users of official foreign exchange. What is the impact of that reduction?

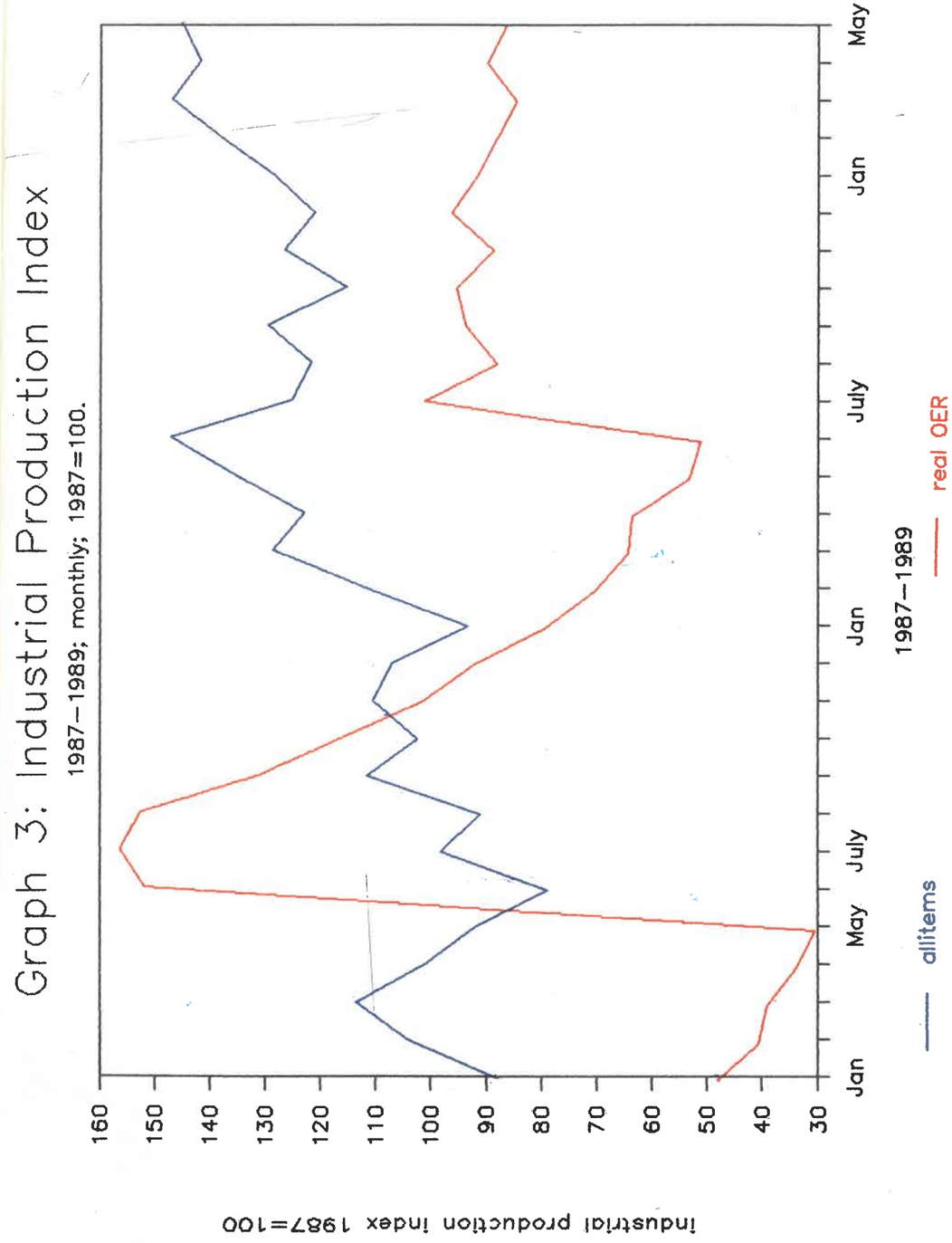
For those who are able to go out and sell goods imported at the official rate at parallel market prices, the only impact is a reduction of their excess profits (or "economic rent"). But a large proportion of official foreign exchange, including most of the programme aid funds from external donors, is used to finance inputs into industrial production - including machinery, parts for repair of machinery and raw materials. These industrial users also receive an implicit subsidy: because, although their inputs are priced at the official exchange rate, the prices of competing imports of final goods are determined by the parallel market rate; so the market price for their products is therefore determined by the parallel market rate. Official exchange rate devaluation causes a reduction in that subsidy.

In addition, many firms in the industrial sector suffer from liquidity problems. Even if they were able to make a profit at a higher (less subsidised) exchange rate, they might not have access to the increased, shilling, working capital requirements at the higher exchange rate. Ongoing disputes about ownership exacerbate the problem of firms' access to credit.

Overall output appears to fluctuate around the times of official exchange rate devaluation. Graph 3 shows the revised monthly index of industrial production recently published by the Statistics department of the Ministry of Planning[8] with the real official exchange rate (scaled to fit the same axes). Since January 1987, there has been a clear trend increase in industrial production, but industrial production fluctuates from month to month. Two of the substantial drops in production came at around the time of large devaluations: in May 1987 and July 1988. Production dropped 30% from March to June 1987 and 23% from June to October 1988[9]. It does appear that output drops in response to an official exchange rate devaluation. But the 1987 drop in production commenced in March 1987, before the currency reform and devaluation in May. After the devaluation, production immediately began to increase. This would suggest that other factors are involved. The second drop is for the two months follwing the July 1988 devaluation. At this time prices were increasing rapidly leading to a decrease in the real stock of money in circulation. It is far more likely to be the case that an interrupted supply of foreign exchange, and liquidity squeezes, cause falls in industrial production than changes in the price of foreign exchange. This can be indirectly confirmed by the fact that people continue to go to the parallel market for foreign exchange and pay a higher price simply to receive the dollars quickly.

In any case, giving effectively subsidised inputs to industry is an extremely inefficient way of encouraging industrial production, because it encourages the use of foreign rather than local inputs, and because it keeps inefficient firms, which would not be profitable at a realistic exchange rate, in business. If it is liquidity problems, rather than reduced profitability, which is really the cause of reduced production, then it would be preferable to increase both the exchange rate and credit to the private sector, than to maintain an overvalued exchange rate just for the industrial sector. The reduction in Government credit needs following devaluation would be partially offset by the increased credit needs of the private sector. But

at least foreign exchange would not be wasted on firms with little prospect of longterm success.



6 Conclusion and some policy implications

The Parallel Market Exchange Rate, Money and Prices

Discussion Papers 1 and 2, in the overview of macroeconomic relationships presented, have emphasised the importance of the parallel market exchange rate as the marginal price for traded goods. General economic conditions, the rate of inflation and the supply and allocation of official foreign exchange are the major determinants of the real parallel market exchange rate. Changes in money supply feed rapidly into prices, both directly through goods markets and indirectly through the parallel market for foreign exchange. Large official exchange rate devaluations have in the past had major, but temporary, disruptive effects on these relationships through speculation.

The Official Exchange Rate

Official exchange rate devaluation allows Government to reduce Government borrowing, and thus inflation, without reducing real Government services or the real coffee price paid to farmers (section 4). It cannot be overemphasised that devaluation should not be viewed as a substitute for the urgent need to increase real domestic tax revenue as the only long-term solution to macroeconomic imbalance. However, in the short-term it should not be delayed on the pretext of there ultimately being an alternative longer-term solution because the correction of the current macroeconomic imbalances are a necessary pre-condition for the achievment of longer-term solutions.

Once prices have increased, and the exchange rate has become overvalued, only permanent reductions in real expenditure or official exchange rate devaluation can prevent an increasing spiral of budget deficits and inflation (section 4).

An additional reason for a prompt response is that

speculation about devaluation leads to excessive price rises and - if they are not accommodated - significant recession in the following months (Discussion Paper 1).

Sales of foreign exchange for consumer goods

Shifting official foreign exchange allocations from productive inputs to consumer goods can have a significant downward impact, or at a minimum a stabilising influence, on the parallel market exchange rate, thus reducing inflation (and the pressure to increase credit). Incurring debt, even concessional debt, in dollars for such a policy can be justified only if relatively small amounts of sales can have a high impact on inflation, given the importance of macroeconomic stability for earning foreign exchange to service debt in the future (Discussion Paper 1).

It would be preferable (section 5) to increase the price of foreign exchange for all allocatees, including industrial users. However, while there are important economic and political costs to increasing the price of foreign exchange to some users, if foreign exchange is to be sold for consumer goods, there is no cost to charging whatever price the market will bear for consumer goods allocations. This is recognised in the S.I.P. II policy.

APPENDIX ONE

Let the net public sector sales of foreign exchange to the Bank of Uganda (FS) be defined as in section 3.3a:

$$FS = (C+OE+Q+P) - (O+G+D+Q) \quad (i)$$

Using the definitions of section 3.1, the Balance of Payments can be summarized as:

$$R = (C+OE+Q+P) - (O+G+D+Q+M) \quad (ii)$$

Recall that R is BOU reserve accumulation and M is BOU total sales of foreign exchange to the private sector (including program aid whose local cover goes to the government budget).

Now (i) and (ii) imply

$$FS = M + R \quad (iii)$$

An increase in the exchange rate from e to e+de reduces the public sector deficit by FS * de, thus reducing public sector credit. But since reserve accumulation (increase in net foreign assets) is equally reflected in total credit expansion, we see that total credit expansion in the economy (TC) equals expansion of private credit (PC) plus the deficit in local currency items in the government budget (LD) plus the shilling value of allocations of foreign exchange to the private sector at the official exchange rate (e * M).

$$TC = PC + (e * R) + D \quad (iv)$$

where D is the total public sector deficit

$$D = LD - (e * FS) \quad (v)$$

now (iii) and (v) imply:

$$D = LD - (e * M) - (e * R) \quad (vi)$$

now (iv) and (vi) imply:

$$TC = PC + LD - (e * M)$$

APPENDIX TWO

It is intended that MPED Discussion Papers should reach a wide non-specialist audience in order to fulfil the aim of informing and stimulating debate. In order to achieve this the papers present detailed economic analysis. This often entails the use of economic jargon which is used for precision of meaning. At the same time in order to make the papers accessible explanations are offered, often examples are given and some of the terms and the theories referred to are explained in an appendix.

"Portfolio Choice": In explaining the levels and changes in market exchange rates the theory of portfolio choice says that individuals will hold a mixture of financial assets such that they expect to maximise the return on those assets. In Uganda people tend to hold shillings and dollars. When shilling inflation is high, say above 100%, then the value of each shilling decreases relative to that of each dollar. Portfolio choice theory therefore says that at times of high inflation the parallel market exchange rate will get higher than it would have been for the equivilent conditions but lower inflation.

"Money Creation": Discussion Paper 1 explained the definition of "money" as being not just notes and coins, but usually bank deposits upon which cheques can be drawn as well. Money is a proxy measure of the "liquidity" in the economy. "Money creation" occurs when the government spends more than is receives in revenue. There is a limit to the amounts which can be borrowed in shillings to finance the government budget deficit and usually the Government has to resort to effectively printing money. This is money creation. In the case of Uganda monetarist arithmatve applies and such increases in the money supply lead to equivilent increases in prices. Therefore it is a precondition for the stopping of inflation that the government balances its budget and does not have to resort to money creation to finance a budget deficit. Given a relative shortage of revenue this means disciplined expenditure control.

"Balance of Payments": These are simply the set of accounts showing the transactions carried out between Uganda and the rest of the world during the fiscal year. By definition they have to balance: total inflows of dollars has to equal total outflows of dollars. Inflows come from exporting, or from thedisbursements of foreign debt and grants. Outflows of dollars are used for imports and for the servicing of the debt incurred to finance imports. A self-sustaining economy might be though of as one which does not need to rely on foreign debts, but which can cover import needs and debt service through export earnings.

1. Based on average sale price of US$ 1.35 per kg

2. this figure depends on assumptions about net accumulation of arrears

3. Equal to total domestic planned revenue (81) minus coffee taxes (7) and petroleum product taxes (10)

4. Equal to total planned expenditure (213) minus externally funded project expenditure (48) minus government imports (10)

5. Equal to foreign exchange cost of petroleum products (16) plus government revenue from petroleum products (10).

6. Equal to foreign exchange value of coffee exports (57) minus government revenue (7)

7. Theoretical models such as Pinto's (see note 11) come to the different conclusion that one-off official exchange rate devaluation, in the absence of changes in the real government deficit, just creates temporary inflation before the black market rate returns to the same premium over the official exchange rate as before. They reach this conclusion because they assume (a) that the nominal price for coffee purchases is linked to the official exchange rate, (b) that all other revenue and expenditure are also linked to the official exchange rate and therefore, since the total government budget is in deficit, the budget is a loser from devaluation in the short run. In addition, it is assumed that the black market exchange rate and prices are able to jump - upwards or downwards - at the time of an official exchange rate devaluation. Together with the assumption of a Government deficit in foreign exchange, this ensures that the economy always returns in the long run to a steady state outcome where inflation and the budget deficit are equal to zero (in a fixed exchange rate regime), with the premium of the black market exchange rate over the official exchange rate earning an implicit tax on exports which finances the real government deficit. If Government has a surplus on foreign exchange, then (1) official exchange rate devaluation improves the budget in the short run (by the argument of section 3.3a) but (2) even if the black market exchange rate and prices are assumed to be able to jump, the forex surplus implies dynamic instability in the path of prices and deficits (by the argument of section 3.3c; a formal model showing the same result is available from the author).

8. Statistical Bulletin No.IP/1 "Index of Industrial Production to December 1988", Statistics Department, Ministry of Planning and Economic Development (June 1989).

9. Measured from pre-devaluation peak to post devaluation trough.