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MINISTRY OF PLANNING AND ECONOMIC DEVELOPMENT

UGANDA

DISCUSSION PAPER NO 1

MACROECONOMIC FEATURES OF THE UGANDA ECONOMY AND SOME POLICY IMPLICATIONS

PART ONE

THE RELATIONSHIP BETWEEN MONEY, PRICES AND THE PARALLEL MARKET EXCHANGE RATE

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Preface

This paper is the first in a series of Discussion Papers to be published by the Ministry of Planning and Economic Development. The aim is to inform economic debate and stimulate discussion. The views expressed in Discussion Papers are solely those of the author of each Discussion Paper, and do not represent policy or opinion of the Ministry or the Government. Discussion Papers are intended for a wide audience and, in order to serve the purpose of informing economic debate, are therefore written as far as possible in a non-technical style. Where technical terms are used they will usually be accompanied by an explanation or an example. There will also often be a short glossary of terms economic terms used. Each Discussion Paper shall aim to analyse available economic data, introduce relevant economic theory and present a policy-orientated analysis of the issue under consideration.

This edition of Discussion Paper 1 follows previous editions which were distributed within the Common Cadre of Economists and Statisticians. In order to meet the standards required of published documents, and in order to futher enhance the accessibility of the material for non-specialists, this paper has been re-written within the Ministry of Planning. The arguments are identical, but are presented in a more straightforward manner having avoided excessive technical detail.

CONTENTS

EXECUTIVE SUMMARY

This Discussion Paper outlines some key structural features of the Uganda economy, and, with reference to recent macroeconomic data, explains the causes of changes in prices and changes in the parallel market exchange rate.

The role of money in the economy is examined as a determinant of both prices and the parallel market exchange rate. And finally the impact of speculation is discussed.

It is shown that changes in the parallel market exchange rate quickly lead to changes in prices. The parallel market exchange rate - and therefore prices - is increased by high rates of inflation, and by increases in money supply. The parallel market exchange rate is lowered, or stabilised, by allocations of official foreign exchange for consumer goods: such as SIP 2. Increases in money supply come from the government printing money to finance a budget deficit. These increases in money supply not only cause inflation through increasing the parallel market exchange rate, but also cause inflation directly by increasing demand for goods without any increase in the supply of goods.

The relationships between the money supply, the parallel market exchange rate, and prices, described in the paper, are shown to have held over the last few years. Deviations from these relationships have occurred due to the impact of speculation.

1. Introduction

This, the first of two papers looking at macroeconomic features of the Ugandan economy, considers the relationship beween money, prices and the parallel market exchange rate. Part Two, which will be the second MPED Discussion Paper, is related to this paper, and looks at the impact of official exchange rate devaluation in Uganda.

The analysis is based on some key structural features of the Uganda economy which are highlighted in section 2. The paper then presents evidence on recent behaviour of a number of macroeconomic variables: inflation and the price level; money supply; petroleum prices; and the official and parallel market exchange rates. The paper looks at how some structural features of the Uganda economy explain past behaviour and the consequent implications for economic policy.

It is shown in section 3 that changes in the price level closely follow changes in the parallel market exchange rate. This is because the "marginal price" of traded goods is determined by the parallel market exchange rate. For example, the cost of replacing a consumer good - imported from Kenya using forex at parallel market rates - which is sold today, is largely determined by the current parallel market exchange rate between the Uganda Shilling and the Kenya Shilling. But the official exchange rate does not determine the marginal price of traded goods.

Section 4 looks at some determinants of the parallel market exchange rate: First, a high rate of inflation increases* the parallel market exchange rate. This is because a high rate of inflation increases the demand for financial assets denominated in foreign currency; and the increase in demand for foreign exchange pushes up the parallel market exchange rate. Second, official foreign exchange allocated for consumer goods, competing with parallel market imports, lowers the parallel market exchange rate. This is because the increased availiability of foreign exchange lowers the demand for parallel market foreign exchange. But official allocations of foreign exchange to be used for imports which would not otherwise have occurred (eg, road making equipment for a Government road-building project) through the parallel market, will not affect the parallel market exchange rate. Finally, increases in the money supply in the economy will increase nominal** demand for goods, and will push up the parallel market rate because of the extra demand for foreign exchange needed to supply these extra goods. In addition, an increase in money supply will push up the parallel market exchange rate by increasing the amount of shillings in circulation relative to the amount of dollars. Each of these effects are well illustrated in recent experience.

Section 5 looks at the role of money in the economy, and the overall effect of increases in money supply on prices. Increases in money supply are quickly reflected in the general price level in Uganda, both directly (through increased nominal demand for local produce) and indirectly - through pushing up the parallel market exchange rate; and therefore the marginal cost of traded goods.

Section 6 looks at the short-term effects of speculation on the price level at the times of official devaluation.

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*Throughout this paper, the exchange rate is measured in shillings per US dollar, thus an increase in rate implies a devaluation of the Uganda shilling.

**A "nominal" change is one which includes the effect of inflation on as variable expressed in terms of shillings; whereas a "real" change is one from which the effect of inflation has been netted out.

2. Structural Features of the Uganda Economy

(1) The shortage of official foreign exchange:

Uganda's export earnings are used to finance government imports, to repay debt and to pay for imports of petroleum products. Foreign exchange is rationed at the official exchange rate, and only negligible amounts are available for allocation to the private sector[1]. External resources, in the form of loans or grants, are used to fund development projects, and, through import support, to fund productive inputs, but not to fund significant imports of consumer goods***.

(2) The pervasiveness of the parallel market for foreign exchange:

As a result of the shortage of foreign exchange from official channels, a large proportion of traded goods in the country are imported with foreign exchange bought at parallel market prices. Very few goods are imported in sufficient quantity at the official exchange rate to ensure that prices are determined by the official, not the parallel market, exchange rate. The only major exception is petroleum products, which are sold at a government determined price equal to cost and margin (at the official exchange rate) plus a tax.

(3) The narrowness of money holdings.

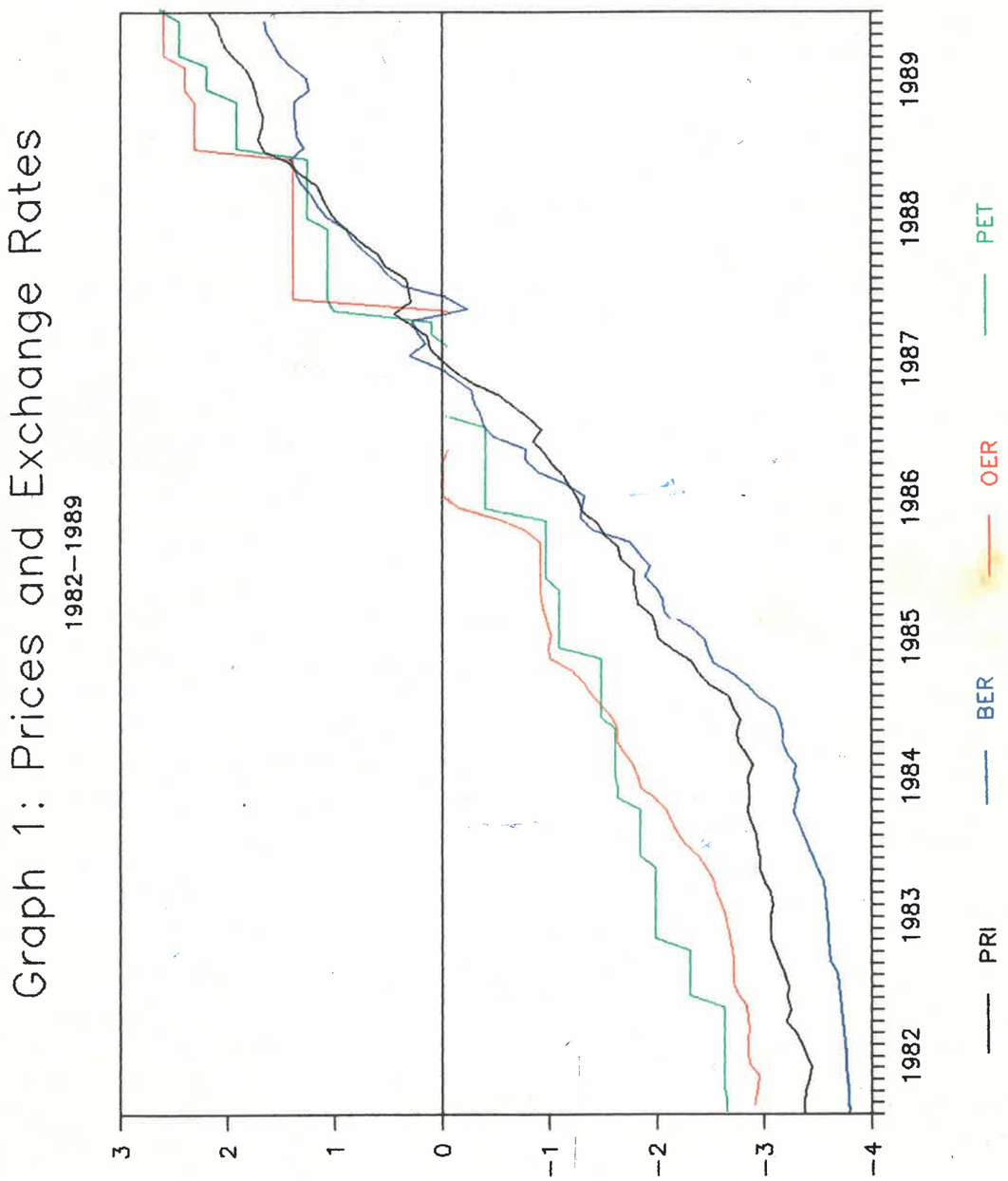
For an economist, "Money" is the stock of liquid assets in the economy; ie, those assets which people can use for buying and selling. Money can be narrowly defined as simply the cash in people's pockets, or it can be more broadly defined to also include deposits in bank accounts upon which people can write cheques. High rates of inflation and political turmoil have resulted in a shallow "monetisation" of the Uganda economy. Half of the "Broad Money" in the economy (cash in circulation plus bank deposits) is in the form of cash[2]. In other words, because of insecurity and negative real interest rates - which have resulted from high rates of inflation- people have not been keeping their financial assets in Uganda Shilling bank acounts. The stock of "Broad Money" is less than 10% of Gross Domestic Product[3] and is barely more than an estimate of annual parallel market imports valued at the parallel market exchange rate[4]. With relatively small amounts of shillings in circulation each note gets exchanged in trade very often. The frequency at which a unit of money gets passed on, or circulated around the economy, through repeated buying and selling, is referred to as the "velocity of money". The reason the observed velocity is so high is that Broad Money measures only part of liquid assets in the economy. By "liquid assets" economists are referring to assets which are widely accepteable for use in transactions: buying and selling. "Broad Money" is one way of trying to measure liquidity in Uganda shillings. In other words, "Broad Money" is a measure of the magnitude of the total "buying power" held in shillings in the economy. However, many people and traders actually hold significant liquidity in parallel market foreign currency accounts. Therefore there is not an observable measure of actual liquidity in the economy.

*** This section does not discuss the "Special Import Programme" started in late 1988, and SIP 2 of June 1989. SIP, one and two, are discussed in section 4.

3. Prices and the Parallel Market Exchange Rate

The level of prices in the economy is largely determined by the parallel market exchange rate. Look at the observed pattern: Graph 1 shows the evolution of the price level[5] (PRI) from 1982 to 1988, together with three possible determinants of prices: the official exchange rate[6] (OER), the parallel market exchange rate[7] (BER) and an index of the price of petroleum products[8] (PET). Graph 2 shows the same series for 1986 to 1989. The broad pattern is clear: prices closely follow the parallel market exchange rate. The relationship with the official exchange rate depends on the official exchange rate policy being pursued. For the period of foreign exchange auction (August 1982 to June 1984), the parallel market rate is moving at a roughly constant premium above the official exchange rate, and prices move in line with both. During the period since 1986, when the official exchange rate has been held constant despite long periods of high inflation, there is no discernable relation between the official exchange rate and prices (See section 6 for a discussion of the short run impact of devaluation).

Why is the parallel market rate so important? Because official foreign exchange is scarce, very little is allocated for the import of consumer goods. Most consumer goods in Uganda, including many basic necessities, are imported with parallel market foreign exchange. As long as official foreign exchange is not available in sufficient quantities to completely satisfy demand at the official exchange rate, we would expect prices to be determined by the marginal cost of purchase, which is the parallel market exchange rate. Importers buying dollars for imports at the official rate, and selling imported goods at the market price determined by the parallel market rate, will be able to make an extra profit, known in economic jargon as a "rent". Their rent is derived from their access to official allocations of cheap foreign exchange. Even when imported goods are sold at official cost by import agents and government parastatals, if the supply of such goods is not sufficient to satisfy demand at the official price, then the final



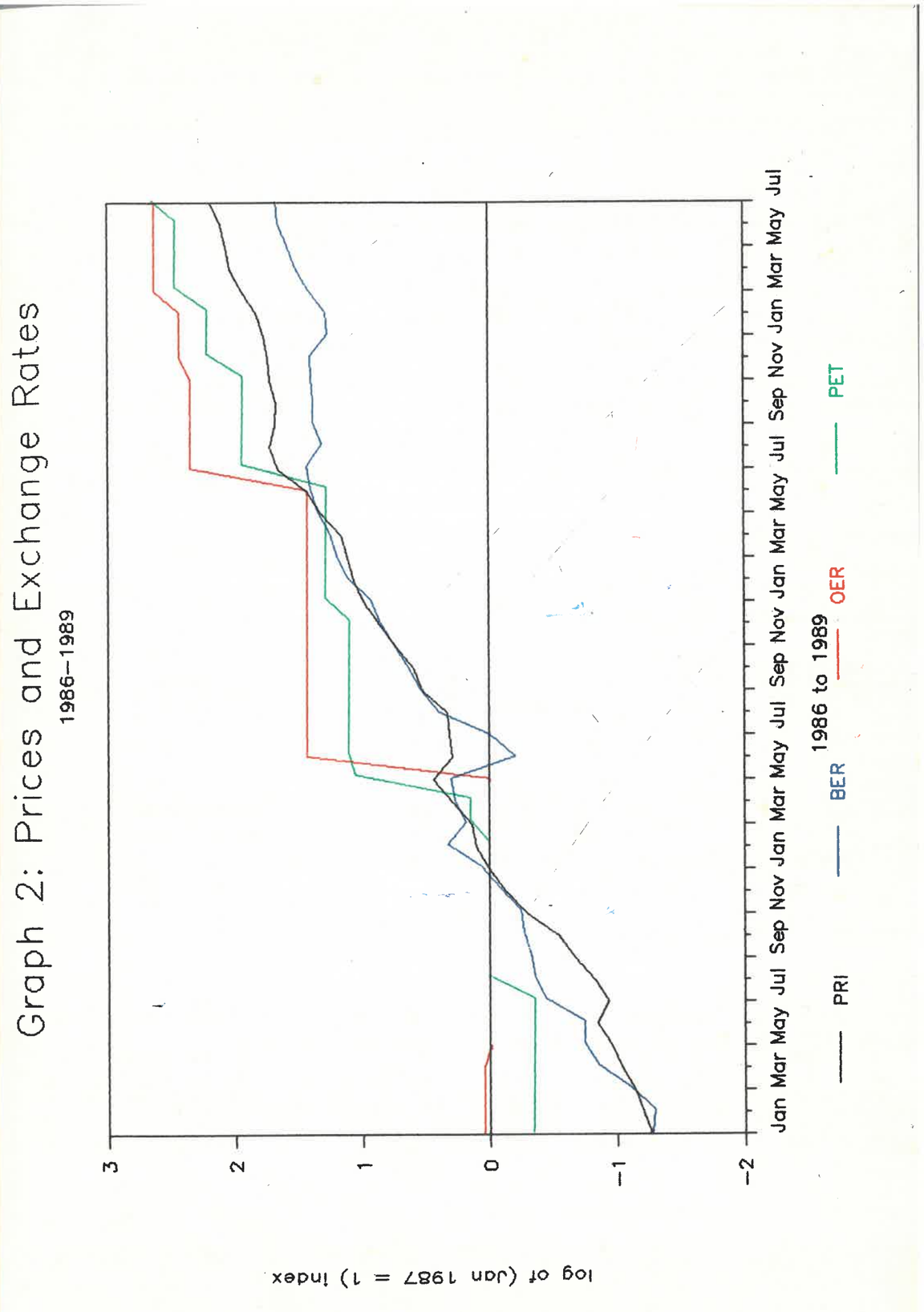
cost to the consumer will be determined by the parallel market rate. In this case, it is the middlemen, not the importers, who extract the "rent". They are able to take the difference between the official price, based on the official exchange rate, and the market price, which is determined by the parallel market exchange rate.

It can be confirmed that the vast majority of prices are determined by the parallel market rate directly - by looking at the individual price series - and indirectly - by confirming that there is insufficient official foreign exchange available to satisfy demand at the official price.

Petroleum products are the sole major exception to this rule. Foreign exchange is allocated in almost unlimited quantities for Petrol, Diesel, Paraffin and other petroleum product imports. Government sets the retail prices and extracts as a tax the difference between costs of supply at the official exchange rate and the retail price. In practice, the petroleum price index (PET in Graph 1) has moved closely with the official exchange rate (OER in Graph 1). Paraffin is a major consumer item, especially of lower income groups, Diesel and Petrol enter into costs both for personal transportation and for consumer goods - especially bulky items like staple foods. Therefore increases in petroleum product prices can be expected to affect the price level because of increased costs. In addition, it is clear that in many politicially sensitive markets - for example, personal transportation and movement of food staples - prices tend to increase more than the increased costs of petrol/diesel as transporters attempt to take advantage of the excuse of a devaluation to compensate themselves for past and expected future inflation in other costs[9].

Statistical analysis confirms the patterns we have described. Appendix One shows the results of a regression analysis which indicates that a one percent change in the parallel market exchange rate leads to a 0.80% change in the price level, and a one percent change in the price of petrol has led to a 0.31% change in the price

level. Thus the data is consistent with our explanation that the parallel market rate is the primary determinant of prices[10]. Any effect that the official rate appears to have on prices is because of the correlation of Government determined petroleum product prices with the official exchange rate: Petroleum product prices are an important determinant of prices.



4. Determinants of the Parallel Market Exchange Rate

Prices are determined by the parallel market exchange rate and petroleum product prices. What determines the parallel market exchange rate? In Uganda, the three main determinants of the parallel market exchange rate are: inflation, the relative availiability of cheaper official forex, and money supply.

Because the market is not directly observable, it is more difficult to interpret. One approach to estimating the size and structure of the parallel market for foreign exchange is to start by estimating imports using parallel market foreign exchange. The Ministry of Commerce issues licenses to traders wanting to import goods without using a Bank of Uganda allocation of foreign exchange. They are not required to state the source of their foreign exchange. In 1988, licenses for imports "without forex" amounted to US$ 96 million. This figure includes licenses issued (with a 0.5% fee on value at the official exchange rate) but never used. On the other hand, some imports may come into the country without a license. What could be the sources of an annual flow of the order of US$ 100 million onto the parallel market? Large scale coffee smuggling has been much reduced, and only hand carried smuggling in border areas remains significant. If 10% of coffee production was smuggled, and 75% of the world price stayed in Uganda, only US$ 20 million would reach the Uganda parallel market. Smuggling of food in border areas is significant, and some net flow of foreign exchange to the parallel market may result. Perhaps US$ 20 or 30 million might come from foreign individuals and organisations working in Uganda, including foreign exchange payments for local goods and services which end up on the parallel market. Some dollars allocated by the Bank of Uganda may re-appear on the parallel market through over-invoicing on both merchandise goods and services. Adding up these sources, we are hard pressed to explain the estimate of US$ 100 million, suggesting that the parallel market is as likely to be the source of a net capital inflow than a path for capital flight, as returnees and residents repatriate dollars from abroad in the

improved political and security situation. Actual transactions in the parallel market would seem to be much below the US$ 100 million (perhaps US$ 30 million) reflecting the fact that much of the foreign exchange is used directly by the recipient, rather than being sold on the market.

We can classify the major determinants of the parallel market exchange rate, in much the same way as we would the determinants of a "floating" exchange rate anywhere, through reference to the theory of "portfolio choice". Peoples' choices as to whether to hold their assets in foreign currency rather than local currency, or local assets, are reflected in the "capital account" of the parallel market. The most important factor affecting these choices is general confidence in the political environment and the stability of the security situation. Currently, as long as that situation is improving, there is likely to be a tendency to repatriate assets to Uganda. Of more narrowly economic interest, the stability of the local currency will be an important factor. High rates of inflation will make it less desirable to hold domestic currency because of the resulting negative real interest rates. There is no doubt that foreign currency is often held simply as a reliable store of value. Below, we look at the relationship between inflation and the real parallel market exchange rate and the impact of sales of official foreign exchange for (competing) consumer goods on the parallel market. By increasing the total supply of foreign exchange (official and parallel market), the marginal price (the parallel market exchange rate) is pushed down. We then look at the relationship between nominal money stock and the nominal parallel market rate.

Inflation and the real parallel market rate

Graphs 1 and 2 showed the close relationship between the parallel market rate and prices. Graph 3 shows the "real parallel market exchange rate" (RBER) - that is, the parallel market exchange rate divided by the price level. It shows the deviations of prices from the levels which would be predicted by the parallel market exchange rate. Some of these deviations are associated with speculation surrounding budgets and devaluations which are discussed in section 6. Here we are concerned with long-run changes in the real rate. Between August 1987 and June 1988 - between the two budgets - the real parallel market rate was between 90% and 100% of its January 1987 value. Since then, however, it has dropped to between 60% and 70% of the January 1987 value.

Often a market determined real exchange rate is positively correlated with inflation for portfolio choice reasons: the higher the rate of inflation, the higher the opportunity cost of holding local currency and therefore the higher is the real demand for foreign exchange. This has been applied as an assumption to theoretical models of parallel markets for foreign exchange[11].

Graph 4 shows the rate of inflation (INF)[12]. It can be seen that the real parallel market exchange rate moves with inflation. Below 100% inflation, the real parallel market exchange rate is roughly constant. Above 100% inflation, there is a strong relationship. Graph 5 shows the actual real parallel market rate plotted with a line predicting the parallel market rate from the rate of inflation; based on datapoints with over 100% inflation. Therefore the rate of inflation is a primary determinant of the long run real parallel market exchange rate for the reasons of portfolio choice outlined above.

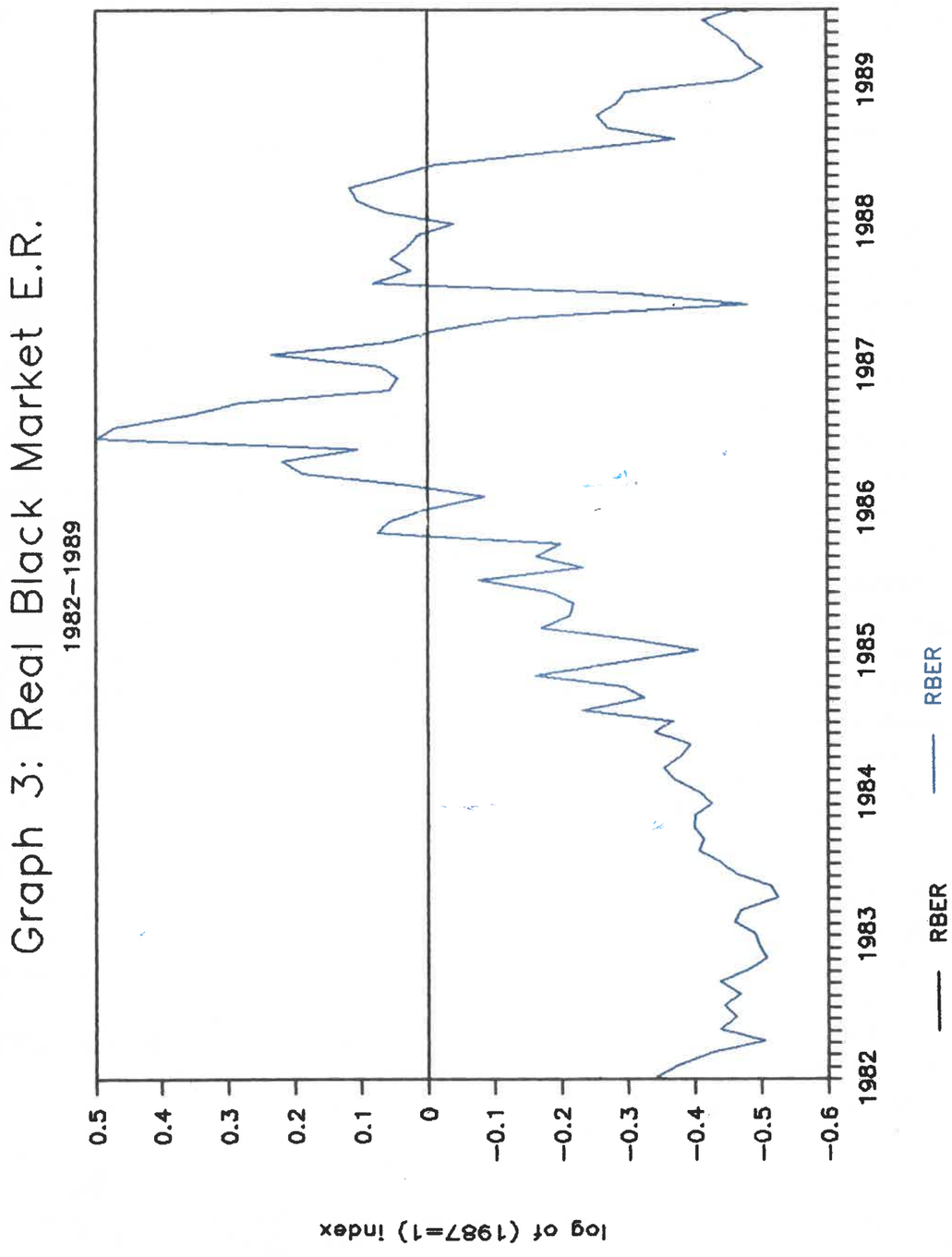
Allocation of official foreign exchange

Sales of foreign exchange may reduce the stock of money in the economy if the shilling counterpart - the shillings used to pay for the dollars bought - is "sterilised", (ie not allowed to increase the money supply), either directly by the Bank of Uganda, or by reducing the Government budget deficit. This "Open Market Operation" will depend on the amount of foreign exchange sold and the price at which it is sold. This reduction in nominal money

supply will feed into the nominal parallel market exchange rate and prices.

There is also a more direct impact on the parallel market exchange rate, depending on the distribution of official foreign exchange allocations, rather than the total amount available. Extra dollars allocated to purchase road construction equipment will have no direct impact on the parallel market for foreign exchange. Dollars allocated to purchase consumer goods generally will. A simple rule of thumb is that if a certain commodity is currently being imported with parallel market dollars, then official allocations of foreign exchange for that good will put downward pressure on the parallel market exchange rate. The demand for parallel market dollars is reduced because official foreign exchange is satisfying some of the existing demand (for dollars) on the parallel market. If, on the other hand, foreign exchange is used to import goods (at the official exchange rate) that were previously not considered profitable to import (at the parallel market exchange rate), the availability is not reducing the existing demand (for dollars) on the parallel market. While sales of foreign exchange for any type of import will, if "sterilised", reduce the amount of money in the economy; shifting sales to consumer goods will put a downward pressure on the parallel market exchange rate from the decreased demand for dollars. This effect may be expected to occur even if insufficient foreign exchange is allocated for any one consumer good to ensure that its market price reflects official cost.

Evidence that a shift to allocations for consumer goods has helped reduce prices by pushing down the parallel market rate would be reflected in a reduction in the real parallel market exchange rate. Evidence of reductions in prices resulting from reducing the total amount of money in the economy would be reflected in money supply figures and the general price level. Note that relatively small amounts of sales of foreign exchange should have a dramatic impact on money supply. At the end of April, money supply was 45



billion shillings and the parallel market exchange rate was around 450 shillings to the dollar. Sales of twenty million dollars at 400 shillings each would raise 8 billion shillings, 18% of total money supply. In the absence of any other changes, a 18% reduction in total money would be expected to have a dramatic effect on prices and the parallel market exchange rate.

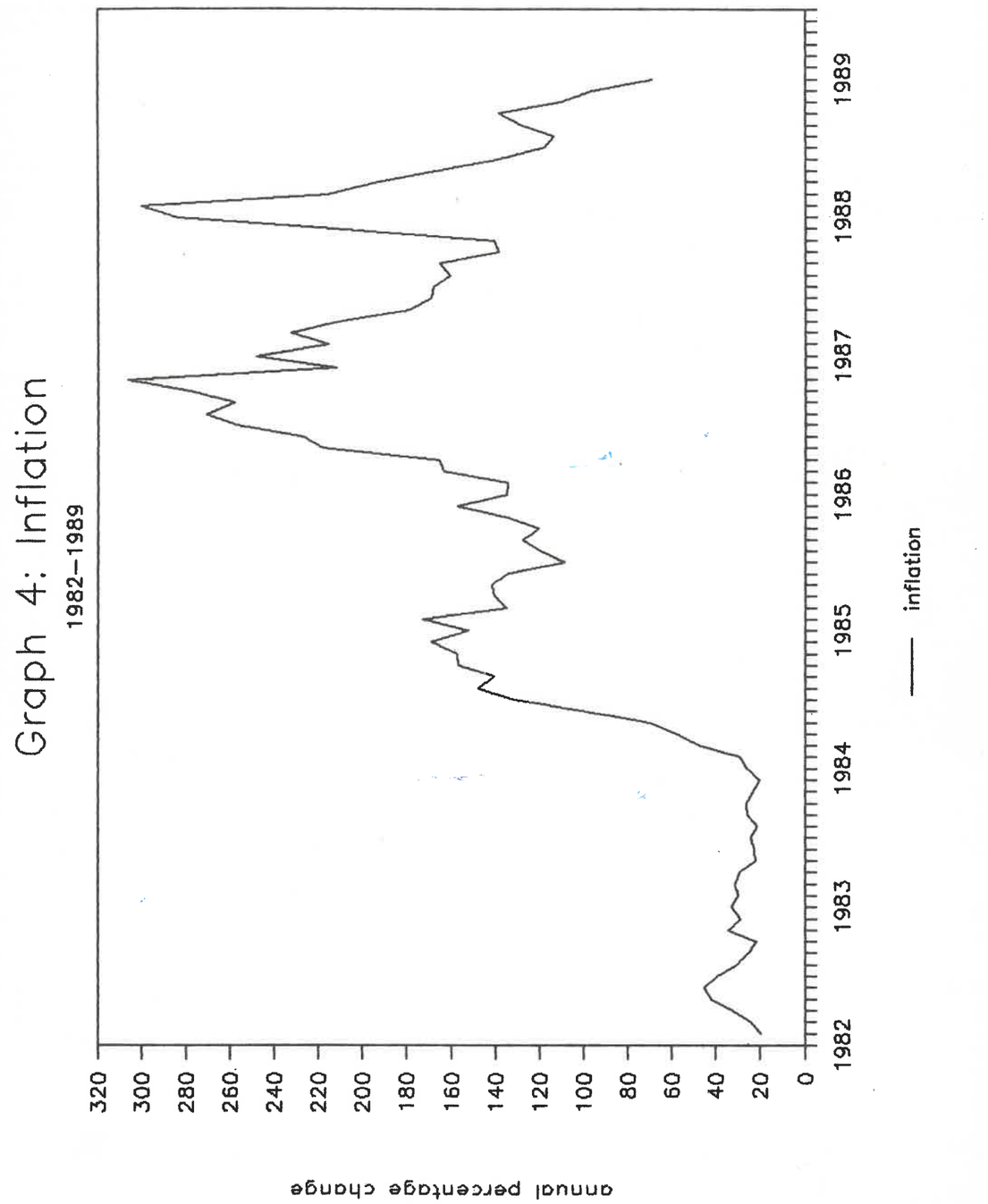
Government instituted a "Special Import Programme" in November 1988 to assist in controlling inflation. Over the next few months, around US$ 30 million of foreign exchange was sold for a wide range of commodities, including many goods that were being imported on the parallel market. These sales would appear to have been a major factor in holding down the parallel market rate in the following months. However, the speed of disbursement was surprisingly low, and the experience illustrated the importance of non-price incentives to use the parallel market: instant availiability, the avoidance of bureaucracy and taxes, and the need to tie up local cover were sufficient to outweigh the 150% premium on the parallel market for some importers.

The "Special Import Programme 2", launched with US$ 40 million in June 1989, aimed to reduce some of these disincentives by a highly streamlined allocation process. At the same time, a price higher than the official exchange rate was to be charged for the foreign exchange (400 shillings to the US dollar, compared with the official rate of 200 and the then parallel market rate of 550). Special procedures were instituted to try to process applications quickly. Prices and the parallel market exchange rate have been stable following the start of SIP 2, despite the budget in the interim. The impact on inflation has been less than what it would otherwise be as a result of slow sales and credit expansion counteracting the effect of SIP sales.

Parallel Market and the Money Supply

Whatever the merits of monetarist interpretations in more

complex economies, the evidence is clear in Uganda that increases in money supply have a rapid and predictable impact on nominal variables in the economy. The parallel market for foreign exchange is no exception. Graph 7 shows the evolution of money, prices and the parallel market exchange rate over the period 1982 to 1989. Section 5. discusses the mechanisms causing them to move together. Section 6. discusses some short run speculative mechanisms that drive them temporarily apart.

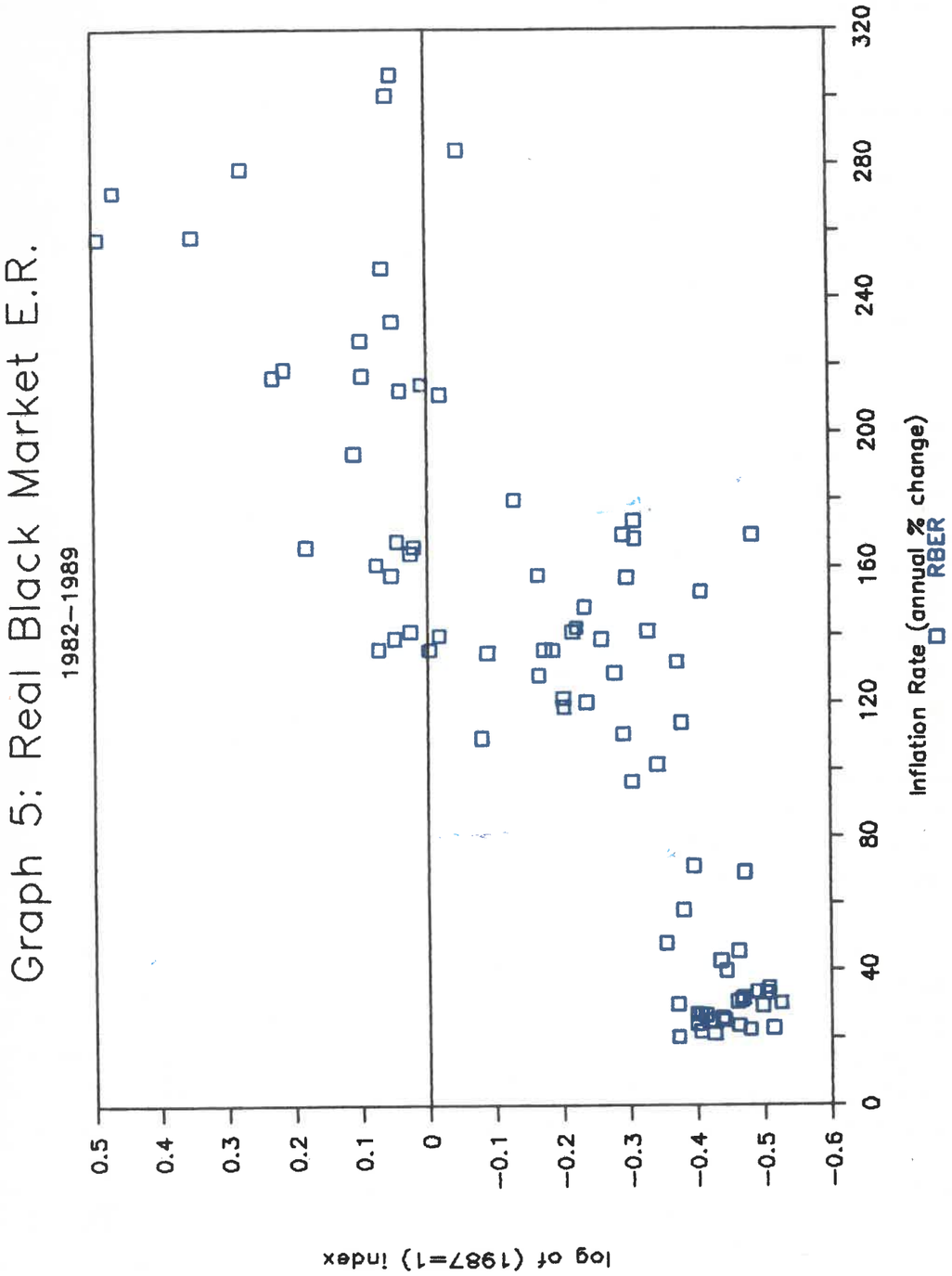


5. Money and Prices

Increases in money supply are rapidly reflected in prices. This partly reflects an indirect mechanism discussed in the previous section: increased money in the economy increases nominal demand on the parallel market for foreign exchange. The parallel market exchange rate determines the replacement cost of traded goods. The prices of non-traded goods prices adjust in line with the prices of traded goods. Therefore increased money supply increases the general price level. Increased money supply is also directly reflected in goods markets. Whatever the precise mechanisms of transmission of money supply increases into increased prices, it seems to be rapid. Regression analysis suggests that money supply increases take just three months to be reflected in prices: that is, if the money stock at the end of last month was 15% up on the previous month, there will be an extra 5% inflation during each of this and the next two months. Graph 8 plots actual prices with the predicted values based on actual money supply and this assumed relationship.

The ability to use parallel market external bank accounts as liquid reserves permits Uganda shilling currency holdings to be kept to a minimum in real terms. This means that, for example, government recourse to printing money to finance a given real deficit will have a larger impact on inflation than in an economy where only local currency notes and demand deposits were liquid. With shallow monetisation of the economy, the inflation that results from the government printing money is much higher than the inflation which would be caused in an economy with deeper monetisation..

We can summarise the conclusions to date: increases in money supply rapidly lead to increases in both the parallel market exchange rate and prices. Therefore tight monetary policy is necessary to control inflation. Measures which put downward pressure on the real parallel market exchange rate will make the necessary control on money supply easier. Shifting official foreign



exchange allocations to consumer goods is one such measure, although of course it implies other costs, i.e. to those losing their allocations. A lower rate of inflation implies a lower level of the real exchange rate. Thus anti-inflationary policies will be, some extent, self reinforcing.

With the paramount importance of money supply in determining prices, MPED Discussion Paper 2 (forthcoming) discusses, in the context of official exchange rate changes, the primary determinant of money supply growth, the Government budget. Here, in section 6., we look in some detail at the reasons why the relationships we've discussed so far - between money, prices and the parallel market rate, fail to hold sometimes in the very short run, particularly in the speculative anticipation and aftermath of budgets and devaluations.

6. The Impact of Speculation

Why is it important to explain very short-run transitory movements of prices and the parallel market exchange rate away from the relationships described above? First, because those relationships will lack credibility if an explanation is not available for very obvious deviations from them which everyone observes. Second, because even if they are only transitory, they reduce the credibility of government policy making. Third, because they also have real economic costs. Fourth, because policies can be geared towards reducing those political and economic costs.

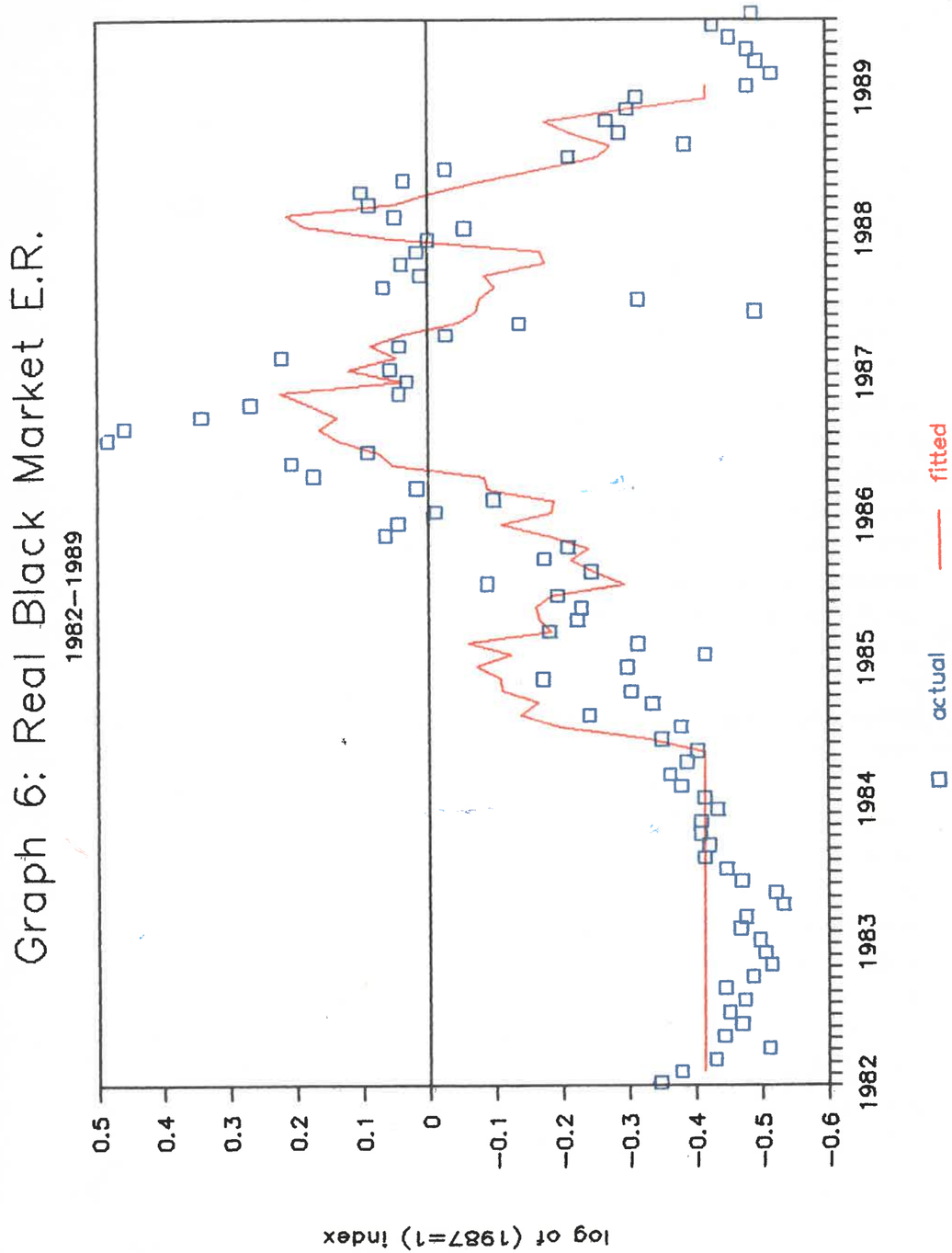
The most important phenomenon is the excessive rise in prices which have in the past - though to a lesser extent recently- occurred following official exchange rate devaluation. By "excessive", it is meant not only that they are inconsistent with the amount of money in the economy, but also that they are not justified by increased marginal costs. They are "speculative" in the sense that prices in the economy (including the parallel market exchange rate) are pushed up in expectation of future price rises. The price rises are only actually permanent if they, and the subsequent apparent shortage of money, are accommodated by the Government just printing more money.

Speculation begins with traders accumulating stocks of goods in anticipation of price increases after the budget. This drives up the parallel market exchange rate and prices, even before any announcement, because of the increased demand for the parallel market foreign exchange needed in order to build up stocks. The price rises remain high after the budget as traders attempt to maintain their profit margins on the purchase cost of their stocks- which are further inflated by the higher parallel market exchange rate. In some cases, budget measures (i.e. petroleum product price rises) have increased real marginal costs, but the price rises are often much larger than would be justified by increased costs. If the price rises are not accommodated by new printing of money then the prevailing high prices may lead to a massive drop in trading volume. The "real money stock" - nominal money divided by the price level - is artificially low because prices have risen without an underlying increase in money. The drop in trade then causes the parallel market exchange rate to drop: first, because stocks are high and not being sold, reducing the demand for foreign exchange which would otherwise have been needed to replace the stocks. Second, because the parallel market rate responds faster to underlying market conditions than other prices. Third, because real money stock is low, and what money is in circulation is disproportionately withdrawn from the parallel market for foreign exchange. Thus the real parallel market drops below its equilibrium level: again, because prices remain artificially high. But this situation cannot persist. Traders who are prepared to lower their prices to reflect the lower parallel market rate (and replacement cost of goods) will take a loss on old stock , but make a profit on their (increased) turnover. This adjustment is remarkably slow, however, partly because stocks start at high levels. The prices of goods with high turnover (i.e. perishable foods) drop first. Eventually, all prices, and the parallel market exchange rate, return to a new equilibrium, where the prices of traded goods reflect replacement cost of stock at the prevailing parallel market rate, and both move in line with money supply.

This pattern can be observed around the May 1987 currency reform and the July 1988 budget. Graph 9 shows the evolution of food prices[13] (PRI), the parallel market exchange rate (BER) and money (MON) for 1987, including just before, and just after, the currency reform of May 15th. The price of food items started appreciating above the usually stable ratio with the parallel market rate in the two months preceding the currency reform. Immediately after the currency reform, prices rose a massive 40%, on top of the speculative rises in the price level preceding the currency reform. These prices were not sustainable: not only was the rise not justified by rises in costs (petroleum products and tax increases) but also there had been a massive decrease in private liquidity from

the 30% conversion tax. Prices fell in June to 16% below the pre-reform May prices. Prices remained relatively stable until September, then started increasing again. Meanwhile, the parallel market rate, which had not increased in line with the general price rise prior to the reform, collapsed immediately after the reform. There was initially little trade and what trade there was at a low (33%) premium on the new official exchange rate. While prices were stagnant from June through September, the parallel market exchange rate was devaluing, so that by the last quarter of 1987, prices and parallel market exchange rate were back on the their pre-reform relationship. Money, meanwhile, continued to grow at a relatively constant rate, except for the one-off drop from the currency conversion tax.

The 1988 budget had a remarkably similar, though less dramatic, effect. Graph 10 shows prices (PRI) and the parallel market exchange rate (BER) on a weekly basis, together with money supply (MON)[14]. Prices started to rise in the weeks preceding the budget, increasing 12% during the month of June. Prices rose a further 7% in the week of the budget. Prices then continued to rise after the budget, to a peak of 28% above the level of the first week in June, in the second week of July. Prices continued to fluctuate for the next eight weeks, dropping at the end of July, and showing no trend through to the second week of September when prices were down to 15% above the level of the index in the first week of June. As in 1987, the parallel market exchange rate did not respond in line with the speculative price rises preceding the budget. After the budget, however, the parallel market rate did rise in line with the continuing rise in prices to a peak of 550 in the second week of June[15]. Thus in the second week of July, the parallel market rate was 31% above the first week of June level, while prices were 28% above. But the Bank of Uganda was not accommodating these price rises, which in any case again exceeded what was justified by increased costs. At this point, later than in the 1987 scenario, the parallel exchange market collapsed, falling to around 400, 38% below the peak value, as demand for foreign exchange collapsed



because trading had ground to a halt at the new unsustainable high prices. Over the next eight weeks, as in 198?, the parallel market exchange rate started to rise again, as traders' stocks decumulated and domestic credit increased; while price level remained stagnant until nominal demand caught up with the inflated prices. By the second week of September, prices and the parallel market exchange rate were respectively 15% and 11% above their first week of June levels - i.e. back in line. Again, the money stock continued to grow gradually.

This analysis confirms that speculation is important, and that it has real effects. Output as well as trading drop as a result of the "real money" squeeze****. Everyone suffers in the immediate aftermath. If the price increases are not accommodated, however, the speculating traders lose from their speculation and prices fall, or rise less fast, to fall back in line. It is unlikely to be the case, that <u>every</u> time there is an official exchange rate devaluation, traders are not only able to recoup any increased costs from consumers, but also increase their profit margin at the expense of consumers; and the evidence shows that it is not the case. In some countries, for example, where poorer groups depend on imported food that is sold at the official cost, official exchange rate devaluation has a sustained effect on <u>relative</u> prices in the economy, which disproportionately hurts the poor. This does not happen in Uganda. The poor suffer only from the temporary speculative rise in prices.

There are two important ways to reduce the disruption to the economy by this speculation. First, traders will learn not to expect price rises to be sustained if tight monetary policy is maintained after devaluation. Thus the post May 1987 and post July 1988 experiences have created some caution: the November 1988 devaluation was not followed by price rises. It was unfortunate that the March 1989 devaluation happened at the same time as an

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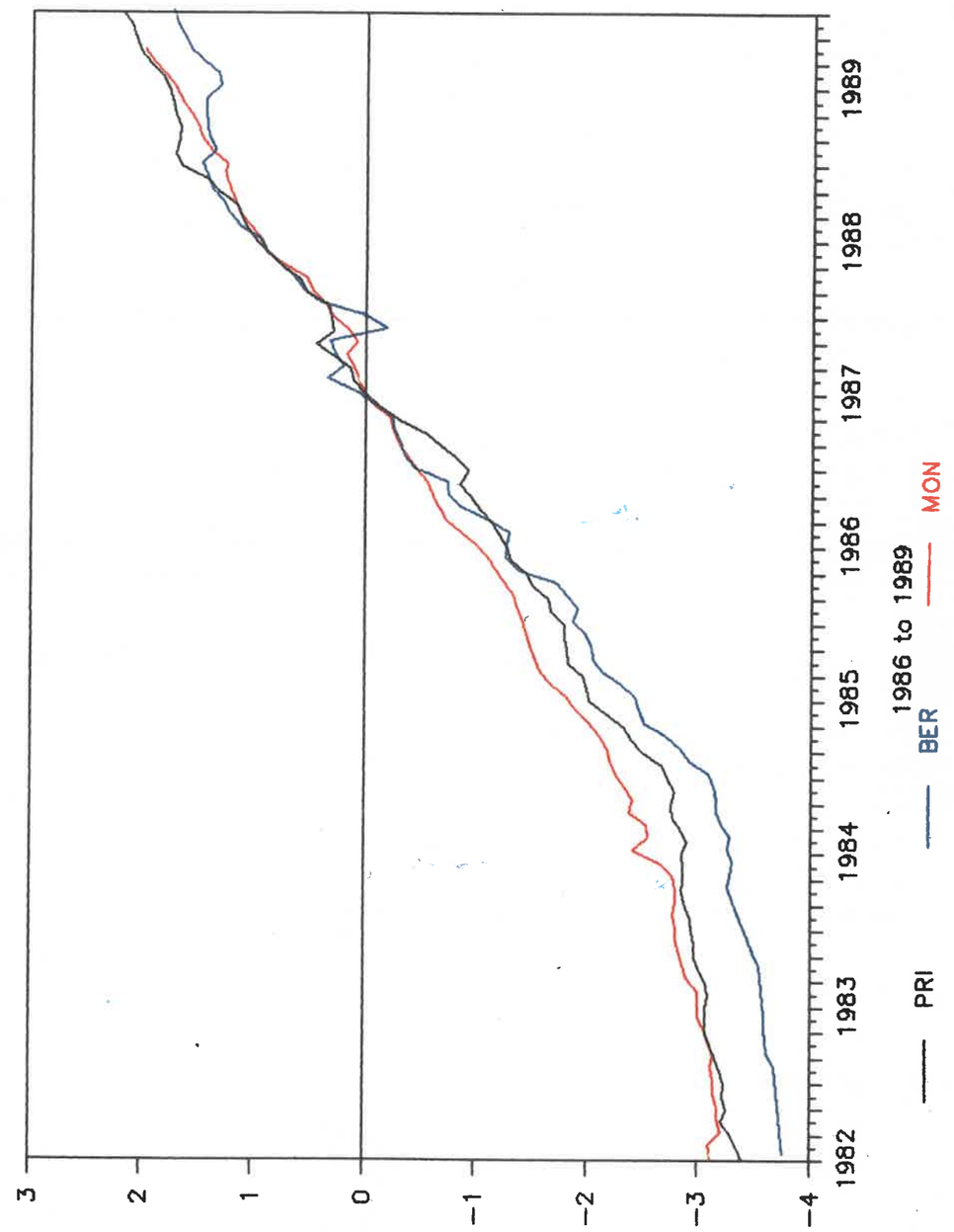
****See MPED Discussion Paper No 2: "The impact of official exchange rate devaluation in Uganda". forthcoming.

(unconnected) rise in crop finance and thus money supply. Secondly, regular unanticipated devaluations do not allow the anticipatory price rises which are difficult to reverse. Again, Government has moved in this direction by committing itself to regular reviews of the exchange rate and devaluing in March to reduce speculation about a budget devaluation.

One final remark on the impact of speculation: if prices rise to excessively high levels immediately following devaluation, prices rise less than the growth of money supply in the following months. This lull in inflation will be reversed once the real money stock has returned to its usual level, creating an apparent burst in inflation. This phenomenon has been observed following both the 1987 and 1988 budgets.

Graph 7: Money, Prices and BER
1982–1989



7. Conclusion and some policy implications

The Parallel Market Exchange Rate

This overview of macroeconomic relationships has 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. The major deflationary costs of official exchange rate devaluation, following speculative pressure on prices, can be avoided by small, frequent, unpredictable adjustments of the official exchange rate, instead of large, infrequent and predictable adjustments. Government has already moved in this policy direction.

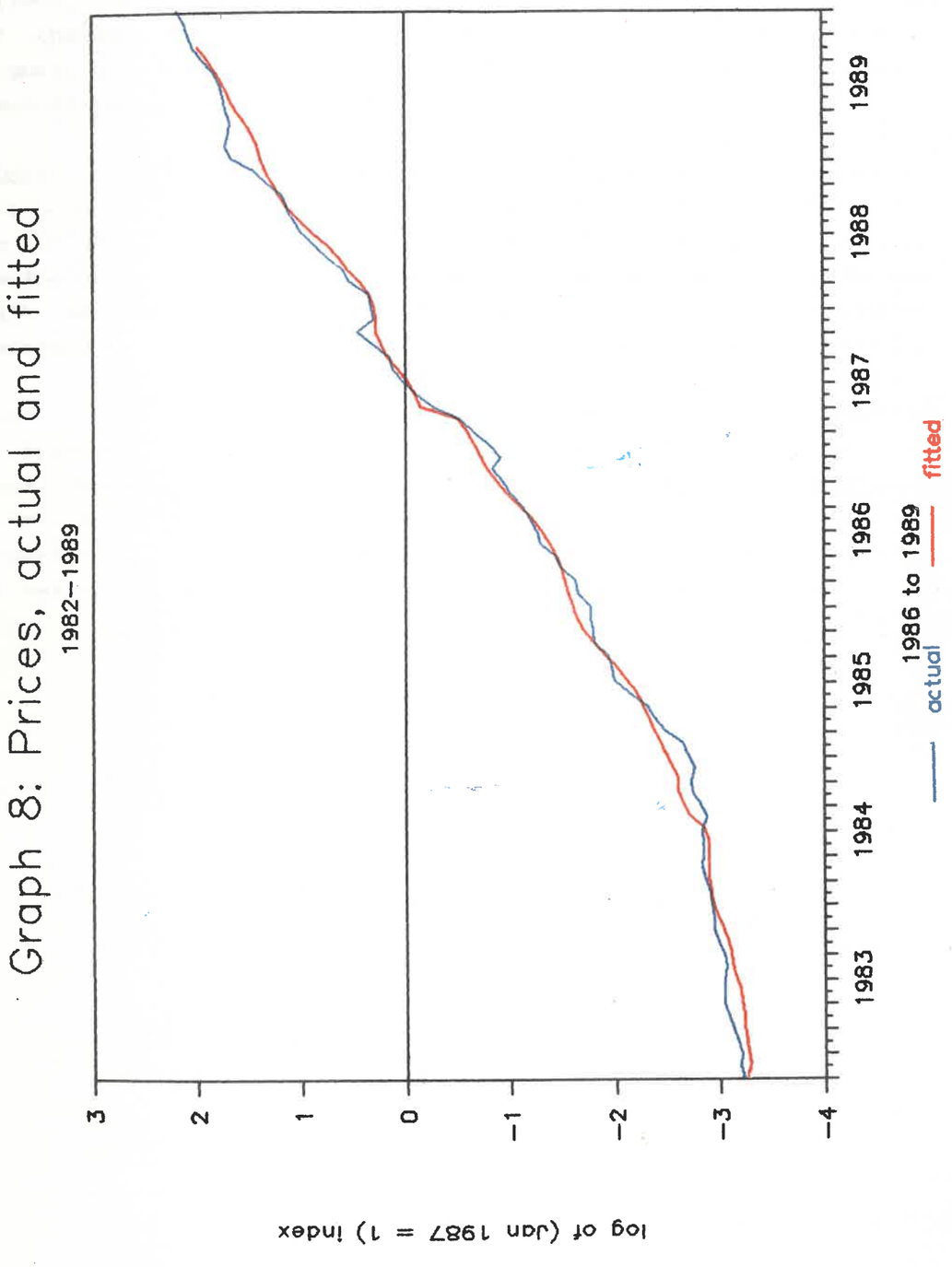
Sales of foreign exchange for consumer goods

Shifting official foreign exchange allocations from productive inputs to consumer goods can have a significant downward impact on the parallel market exchange rate, thus reducing prices (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.

Stephen Morris
August 1989

Appendix One

The results of the regression analysis reported in section 3 were derived from initially regressing the natural log of the price index for the period January 1986 to April 1989 on both one period lagged logs of the parallel market exchange rate and the official exchange rate. This gave highly significant elasticities of .92 and .21 respectively. However, the inclusion of the petroleum price index lead to the elasticity on the official exchange rate dropping to be close to zero at 0.03 while the elasticities on the parallel market exchange rate and the petroleum price index were highly significant and positive at 0.80 and 0.31 repectively. Hence the conclusion that the effect of the changes in the official exchange rate on prices is transmitted through the petroleum price and the estimate that a one percent change in the parallel market rate leads to a 0.80% change in price level and a one percent change in the price of petroleum products leads to a 0.31% change in price level.



Appendix Two: Glossary of some economic terms used.

Real/Nominal When figures expressed in Shillings are compared between different points in time they can be compared with the effect of inflation included or excluded. A nominal figure, or rate of change is one which includes the rate of inflation. A real figure, or rate of change, excludes the effects of inflation and is ususally a better comparison especially over long periods of time.

Money An economist's term meaning the stock of cash plus the deposits in bank accounts in the economy. The stock of money can be thought of a the amount of ready purchasing power (in shillings) in the economy. The "quantity theory of money", usually associated with "monetarists", says that increases in the stock of money do not increase real purchasing power, but instead leads to higher prices.

Cost In economic terms "cost" can take different shades of meaning. The usual definition of cost is that of "opportunity cost". Although the cost of having a beer is usually thought of a simply the price of the beer; for an economist it is also the lost opportunity of spending that money and time differently. This may, or may not, be as great as the price of a beer....

1. In calendar year 1988, export earnings were US$ 273 million. Debt Payments (Principal and Interest) were US$ 56 million, Petroleum Product Imports were US$ 76 million, Net Nationally Financed Service Outflows US$ 51 million. Much of the balance of US$ 91 million was used for Government imports. (Background to the Budget 1989/90, table 4 (BTTB 4) and Bank of Uganda)

2. At end April 1988, there were 26.9 billion shillings of cash in circulation compared with 27.9 billion shillings of bank (demand and savings) deposits. (BTTB 15)

3. Based on the average of the end March, end June and end September stocks for 1988 (35 billion shillings), and the nominal GDP estimate for calendar year 1988 (366 billion shillings). In fact, the nominal GDP estimate is perhaps on the low side, suggesting an even lower money/GDP ratio. (BTTB 2 and 15)

4. Licenses issued for "imports without foreign exchange" totalled US$ 96 million in 1988 (see section 2.2 on the parallel market). These would be worth 38 billion shillings at the end December 1988 parallel market exchange rate of 400, when the stock of money was 39 billion shillings.

5. Based on a simple average of the MPED Kampala low income Consumer Price Index and the Bank of Uganda Kampala middle income Consumer Price Index (BTTB 19 & 20).

6. For the period 1982 - 1984, this shows the "Window 2" exchange rate (BTTB 18)

7. Unpublished data

8. Derived from BTTB table 24

9. A simple comparison of the increased cost of petrol on a given matatu journey, and the price rise transporters attempt to justify on the basis of the petrol price rise, confirms.

10. The paralle market rate determines the replacement cost of traded goods: we would expect traded goods to respond first to changes in the parallel market exchange rate, with locally produced and non-traded goods responding to the increased cost of traded goods. Preliminary work has not identified a relationship between the timing of price increases of different goods which is consistent across time periods. This could be (1) because non-traded goods respond very fast to, and sometimes in anticipation of, increases in traded goods prices or, (2) because individual price series are too inaccurate and subject to too many extraneous factors to identify a pattern.

11. For example, Pinto (1988) "Black Markets for Foreign Exchange, Real Exchange Rates, and Inflation" (World Bank PPR Working paper series 84).

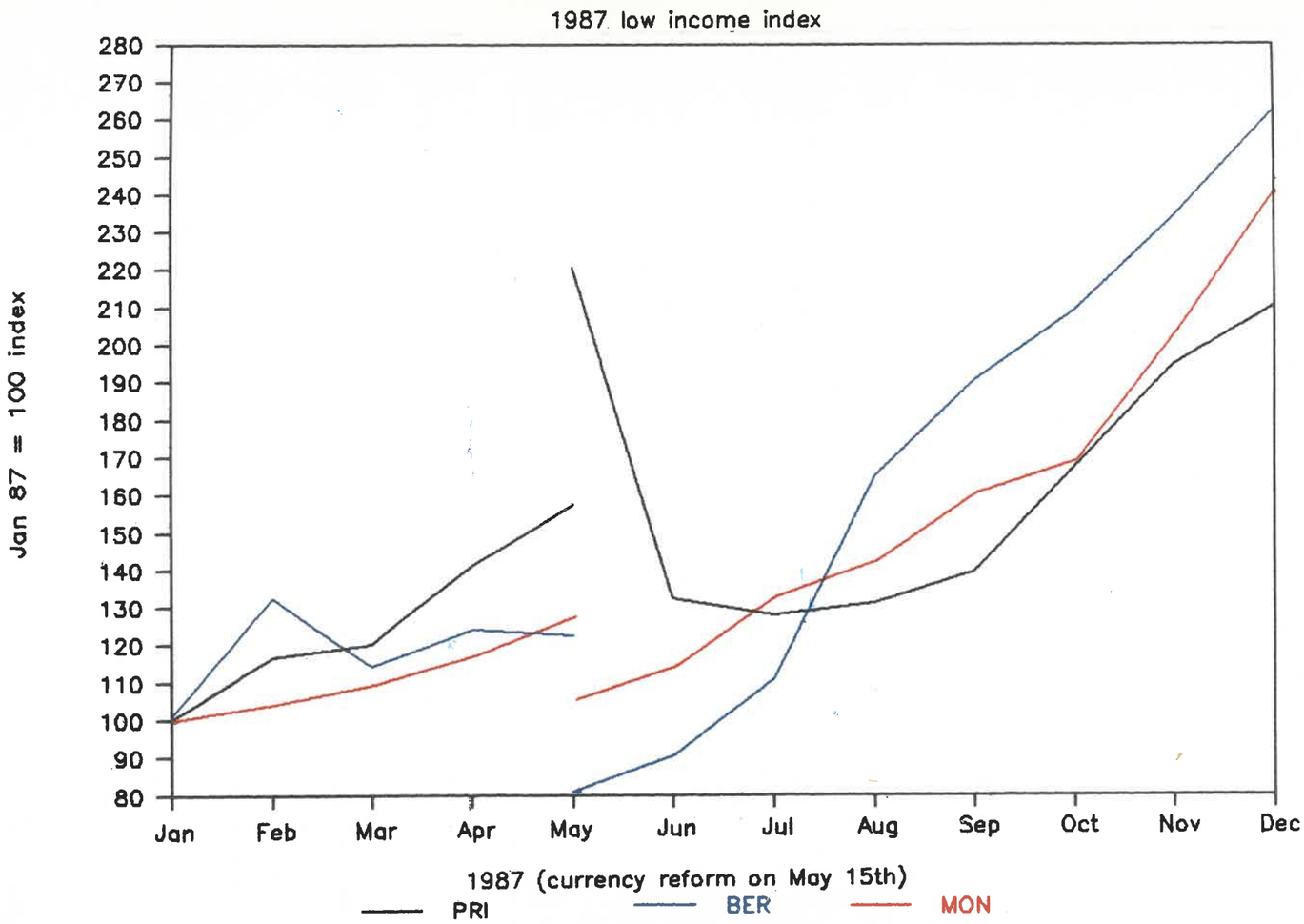
12. The measure used is the actual annual change in prices from six months previously to six months after, based on the price series of Graphs 1 and 2 (see note 6). Thus this measure of inflation includes past inflation and perfect foresight of future inflation.

13. From the MPED Kampala low income price index. Food prices are used because they were recorded twice in May, once just before and once after the currency reform. It is also possible that the full low income price index exaggerates the impact of official exchange rate devaluation because of a bias in favour of formal sector products which may no longer be a major part of consumer expenditure (for example, Nytil clothes). The consumer price indices are currently being revised on the basis of the 1988 Pilot Household Survey conducted by the Statistics Department of the Ministry of Planning and Economic Development.

14. Prices and the parallel market exchange rate series are based on data from the Kampala "Financial Times" newspaper, which gives data on a more regular basis than government publications. The index is calculated using the Statistic Department relative weights on those prices published in the FT.

15. But the FT figure of 550 is thought unrealistically high by some.

Graph 9: Food Price Index



Graph 10: Prices, Money and BER

June–Sept 1988